

COMMUNICATION AUDIT
FOR THE
INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS
PHASE I
EXTERNAL COMMUNICATIONS

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PREFACE

On several occasions the need for dedicated international high-speed data channels at IIASA has been discussed. While the advantages of such communication facilities for an international organization like IIASA are clear, the cost is a major barrier. Before any detailed cost/benefit analysis can be conducted, it is necessary to know more about the communication patterns currently existing within IIASA. These patterns are most meaningful if taken in their total context, i.e. if the broadest range of communication media are evaluated.

In early 1977 an analysis was conducted of external communication mechanisms currently in use at IIASA. This analysis was based on a six-month sample (September 76 through February 77) of the communication traffic via ten different media (telephone, telegrams, night letters, European telex, Non-European telex, travel by IIASA staff, visitors to IIASA, workshops, mail, and IIASA publications). By condensing the data for telegrams, nightletters, European telex, and Non-European telex into one mode an analysis of seven general modes was then conducted. The analysis did not include local telephone traffic (i.e. non long distance) nor did it cover incoming messages via mail, telex/telegram or telephone or internal seminars.

While this study has helped to clarify a portion of the current communication traffic at IIASA, it does not answer the question regarding the justification for high-speed data channels. That answer will evolve, but in the meantime this report can provide useful data on what now exists. Even so, this is a snapshot of the situation several months ago and even now data traffic for telexes, as an example, is increasing.

A further study is also recommended of the internal communication patterns within IIASA. Such a study could follow the form of the Communication Audit offered by the International Communication Association (ICA) (Goldhaber, G.M. et al. "ICA Communication Audit Survey Instrument: 1977 Organizational Norms," undated report, State University of New York at Buffalo) and would provide details on the communication patterns of the staff at IIASA with a focus on their interaction with each other. Such a study can be justified for several reasons. First, it would provide useful insight into the organizational and management relationships at IIASA. Second, it would provide an indication of the patterns of communication between scientists which could be extended back to the home institutions of IIASA scientists if high speed communication channels were available for computer-communication systems (e.g. computer conferencing).

The data base used for this study is in machine-readable form and is available for additional analysis. Interested individuals should contact U. Sichra (X-293) or D. Penniman (X-498).

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1.0 INTRODUCTION

1.1 Organization of Report

The survey of external communication activity is organized in two major parts: (1) the body of the report which summarizes the results for each communication mode on the basis of overall traffic, monthly variations, cost center variations, extent of private usage of selected modes, and general results and (2) detailed appendices for each communication mode including analysis by country. Sampling technique and method of analysis are described in the following sections of the introduction.

1.2 Sampling Technique

For the six-month period September 1976 through February 1977 all available data on communication activity for the modes shown in Table 1.1 were collected from a variety of sources at IIASA. Table 1.1 indicates the sources of data for each mode and any estimates, assumptions, or limitations related to data for each mode.

In cases where modes involved personal use (e.g. travel, telex, telephone) and that data were included in the sample, all names or personal identification were eliminated from the data base to prevent invasion of privacy.

1.3 Method of Analysis

The data base of source data was constructed around a basic record format which could be used across all modes of communication to be evaluated. This basic record contained the fields shown in Table 1.2.

1.3.1 Processing Routines

A series of processing routines were written to select and analyze each subset of data by communication mode. These routines cumulated data by mode for each country by month and cost center plus summarized data across all cost centers and across all months. The tables generated by these routines appear in Appendices A through J. For each table an average monthly cost and frequency were generated where appropriate and cumulative totals were generated for each variable. The basic variables analyzed for each mode were necessarily tailored for that mode, but generally included a total length measure (e.g. words, minutes, days), cost (AS), frequency of usage, average length per unit, and average cost per unit.

1.3.2 Special Cost Estimations

Only the visitors expenditure record from Cost Center 100 (Director's Office) was available and therefore the average travel expenses for a visitor are based on this limited data. The per diem costs are standard for standard visitors. Thus it was possible to compute the average cost of a visitor day (i.e. travel + per diem). This, on the other hand, gives a low estimate of cost per visitor day, due to the occasional arrival of some special visitors with extra fees.

The data available for workshop expenditures only included travel expenses and per diems. From them an average expenditure for a workshop attendee day was computed. In our sample period there were a few workshops which did not debit the cost center budgets. The average expenses for workshops in a month were computed, however, as if there had been no free-of-charge workshops.

TABLE 1.1: DATA SOURCES AND RESTRICTIONS BY MODE
FOR EXTERNAL COMMUNICATION ANALYSIS OF IIASA

| Communication Mode | Source | Restrictions (Estimates, Assumptions, Limitations) |
|--------------------|---|---|
| Telephone | Direct-Dial From PTT Billing Records | Outgoing long distance calls only. Includes private calls (cost center # 1). |
| | Other from Switchboard Log Records | |
| Telegrams | PTT Billings | Includes private telegrams (cost center # 1). Outgoing only. |
| Night Letters | PTT Billings | Includes private night letters (cost center #1). Outgoing only. |
| European Telex | Telex Operator Records | Data by cost center is estimated each month by telex operator, as PTT billing arrives quarterly and is aggregated. Estimated data is used for cost center billing. General rule for computing no. of telexes (European) from total monthly billing of each cost center is 10 AS per telex. No telex length data available. Outgoing only. Private telexes not included. Eastern countries included in non-European due to PTT billing policy. |

TABLE 1.1: (Continued)

| Communication Mode | Source | Restrictions (Estimates, Assumptions, Limitations) |
|--------------------|-----------------------------|---|
| Non-European Telex | PTT Billings | Includes private telexes (cost center #1). Outgoing telexes only. Includes Eastern European countries due to PTT billing policy. |
| Trips | Travel Authorizations | Does not include exclusively private travel. Does include combined private/IIASA travel. Where multiple destinations were involved, only the most distant destination was included. Cost is amount committed on travel authorization. Where trip cut across two calendar months, time was arbitrarily assigned to the ending month of the trip. |
| Visitors | Visitor's Services Log | No cost data available, except for Director's Office visitors. Consequently, cost data were estimated from average cost data computed on this limited data. Where visit lasted across two calendar months, the time was arbitrarily assigned to the ending month. Does not include attendees to workshops. |
| Workshops | Conference Services Records | Includes only cost for travel and per diem. Does not include internal Seminars/Conferences. Location was always Austria. Conferences outside the Institute not included. |

TABLE 1.1: (Continued)

| Communication Mode | Source | Restrictions (Estimates, Assumptions, Limitations) |
|-----------------------|--------------------------------------|---|
| Mail | Mail Room Log | No private usage data (estimated by mail mail room staff at 7000 AS per month). Average per item postage charge estimated at 15 AS by mail room staff. Does not include incoming mail. Mailing cost for publications is not reflected in individual cost center data, but is generally billed to Documents and Publi- cations Department. |
| Reports | Documents and Publications Office | Only the number, type, and length of publications was requested as source data. No. of copies of each publication estima- ted at 600 by Docs/Pubs office. Average cost per page (based on assump- tion of 600 copies) is estimated at 275 AS (Duis memo dated 1975-09-17). |

TABLE 1.2: STANDARD DATA BASE RECORD FORMAT FOR COMMUNICATION
MODE USAGE DATA

| FIELD TYPE | FIELD LENGTH (characters) (1) | TYPICAL CONTENTS |
|--------------------|----------------------------------|--|
| Communication Mode | 2 | TR (indicating travel) |
| Begin Date | 8 | 76 8 27 |
| End Date | 8 | 76 8 30 |
| Destination | 28 | Switzerland |
| Length (2) | 10 | 4 (e.g. days, units vary with mode) |
| Cost Center | 3 | 520 |
| Cost | 14 | 7374.00 (Austrian Schillings) |

(1) Without type-separating blanks

(2) For travel, visitors, and workshops this field contains 0 and the value is computed directly from begin and end dates.

2.0 SUMMARY OF RESULTS

This section contains aggregated summaries of the detailed data presented in the appendices. Where possible, data are grouped into useful subsets or parameterized to allow comparisons across modes, months, and cost centers, for example.

2.1 Overall Traffic

Table 2.1 presents a summary of frequency, unit cost, and cost per month for each mode analyzed. A rough estimation of communication output rate based on words per unit by mode is shown in Table 2.2 as a preliminary means of comparison. This comparison technique clearly does not take into account the qualitative differences in each mode as a means for accomplishing different communication goals and is based on several arbitrary assumptions identified in footnotes to the table.

Figures 2.1.a, 2.1.b and 2.1.c present illustrations of the proportion of communication allocated to each general mode class using the cost data from Table 2.1 and the parameterized data of Table 2.2. Remember that these figures are based upon all of the assumptions noted in Table 2.2. Even so, these graphs provide a rough indication of the expenditures, usage, and cost per word for the various modes.

On the basis of this analysis travel consumes the greatest single portion of expenditure while reports by far outstrip all other modes in terms of words transmitted.

2.2 Monthly Variation

Fluctuations in communication activity (by frequency of usage) for each mode by month are shown in Figure 2.2. Each line represents a different form of communication and the time scale is shown in months for the six-month sample. This figure indicates the relative stability or instability of usage by mode. As an example telephone usage remains relatively stable across time while workshops showed wide variation by month in the sample.

2.3 Cost Center Variations

Based on the data by cost center in Appendices A through J an analysis of grouped data for cost centers according to the sets shown in Table 2.3 was conducted. Notice that the cost center numbers are not current, but reflect historical usage of these numbers during the time period covered by the sample (based on cost center listing dated January 1, 1976, and revisions as of

January 1, 1977). Figure 2.3 shows the relative proportion of activity across all communication modes by each cost center grouping. The rate data is based on the assumptions of Table 2.2. The cost data is based on material presented in Appendices A through J. It should be noted that the variations between cost center groupings provides a rough indication of level of "external contact" by each group.

From this analysis there is clear indication that a wide variation in expenditure exists between various cost center groupings. This data should be compared with overall budget data for each grouping (not available in this report). In addition, there is general agreement between the proportion of expenditure by cost center grouping and the proportion of words produced by the same group. This indicates that all cost centers are paying relatively the same per word and therefore using about the same mix of modes. There are certainly some exceptions to this and a detailed analysis of data in the Appendices can provide each cost center group with a better insight into its own communication mode selection pattern.

2.4 Private Expenses

Figure 2.4 illustrates the proportion of usage for private purposes of selected modes of communication based on expenditure. The percentage by frequency of usage is also given as parenthetical data. In one mode (trips) the data were not evaluated and in other modes (visitors, workshops, reports) its analysis was not appropriate. In the case of outgoing mail the percentage represents an estimate by staff in the mail room and is not based on data in our sample. For European telexes we do not have an estimate of private expenditures. The analysis indicates that a relatively small proportion of the total communication usage is charged to personal activity (telephone is the greatest with over 20%).

2.5. General Results

This overall analysis has provided insight into usage patterns at IIASA for each of seven general external modes of communication. While mode selection is a function of many factors besides cost per word, the usage of each mode is generally related to cost. In addition, some modes are clearly selected because of their speed (e.g. telex and telephone) or interactive nature (e.g. travel, workshop, visitors, and telephone). The role that

high speed data channels would play in IIASA's communication activities could be quite significant, just from this preliminary analysis. Some of the functions could include:

- . Message switching (automated mailbox)
- . Computer conferencing
- . Conference planning
- . Report planning and reviewing
- . Report production/distribution

The justification from a cost standpoint will require further analysis but the data in this report should provide the basis for that analysis.

TABLE 2.1: ANALYSIS OF SIX-MONTH SAMPLE OF
COMMUNICATION MODES AT IIASA (1)

| Communication Mode | #/Mo. | Unit Cost (AS) | Cost/Mo. (AS) |
|----------------------------|---------|----------------|---------------|
| Telephone | 370 | 105 | 39,000 |
| Telegrams | 33 | 270 | 8,900 |
| Night Letters | 23 | 270 | 6,200 |
| European Telex | 300 | 10 (2) | 3,000 |
| Non European Telex | 65 | 135 | 8,800 |
| Travel Days (3) | 245 | 1,300 | 320,000 |
| Visitor Days (4) | 190 | 1,180 (5) | 225,000 |
| Workshop Attendee-days (7) | 210 | 710 (6) | 150,000 |
| Mail | 4,900 | 15 (2) | 73,500 (8) |
| Report Pages Printed | 360,000 | 0.57 | 205,000 |

- (1) All values rounded
- (2) Estimated based on experience of individuals handling this mode
- (3) Travel days = No. of trips x trip length
(Avg: 31.6/Mo.) (Avg: 7.7/trip)
- (4) Visitor days = No. of visitors x length of stay
(Avg: 18.2/Mo.) (Avg: 10.5/visitor)
- (5) Estimated based on expenditures for Cost Center 100
- (6) Includes only travel costs and per diems
- (7) Workshop Attendee-days =
No. of workshops x days/workshop x attendees/workshop
(Avg: 2/Mo.) (Avg: 3.1/wsh.) (Avg: 34.2/wsh.)
- (8) Excludes monthly average cost of 25,700 AS for publication mailing which has been included in publications costs.

TABLE 2.2: MONTHLY INFORMATION OUTPUT COMPARISON BY MODE

| Communication Mode | Unit | No. of units per month | Rate per unit (words) | Monthly transfer rate (words) (8) |
|--------------------|---------------|---------------------------|--------------------------|--------------------------------------|
| Telephone | Conversation | 370 | 450 (1) | 166,500 |
| Telegrams | Messages | 33 | 40 | 1,300 |
| Night Letter | Messages | 23 | 40 | 900 |
| European Telex | Messages | 300 | 40 (2) | 12,000 |
| Non European Telex | Messages | 65 | 40 (3) | 2,600 |
| Trips | Days | 245 | 27,000 (4) | 6,480,000 |
| Visitors | Days | 190 | 27,000 (5) | 5,140,000 |
| Workshops | Attendee-days | 210 | 14,400 (6) | 3,024,000 (9) |
| Mail | Items | 4,900 | 200 (7) | 980,000 |
| Reports | Pages Printed | 360,000 | 200 | 72,000,000 (10) |
| Total | - | - | - | 87,807,300 |

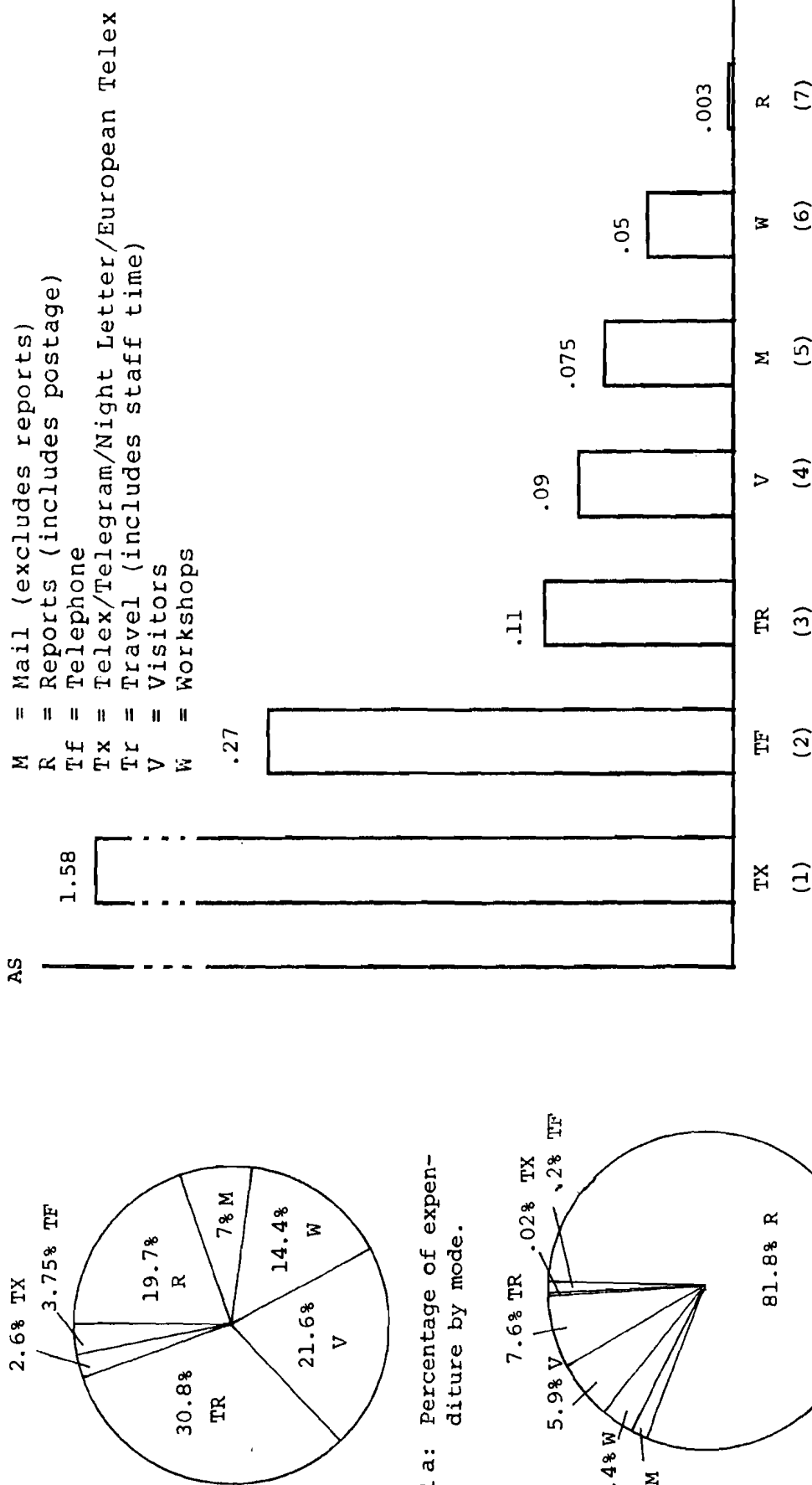
- (1) Rate of speech assumed to be 150 words per minute times estimated 6 minutes per conversation (English language) and IIASA participant speaking 50% of the time.
- (2) Assumed to be the same number of words per message as Night letters or Telegrams (about 40 words/message).
- (3) See (2)
- (4) Assumed two meetings per day at three hours each using speech rate of 150 words per minute and IIASA participant speaking 50% of the time.
- (5) See (4)
- (6) Assumed continuous speech during 8 hours. Assumed no simultaneous conversation between subgroups, but at least one person talking at any time and IIASA participants talking 20% of the time.
- (7) Assumed average item is one-page letter of 200 words (no. of units reduced to correct for report mailing).
- (8) Computed by multiplying (Rate per unit in words) x (Number of units per month), except as noted for trips, workshops and reports where adjustments were made.
- (9) Assumed that an average of 30 persons get the information.
- (10) Assumed 10% backlog to account for reports not distributed and for older reports which are distributed during that month. Words/page same as (7).

TABLE 2.3: COST CENTER GROUPINGS
USED FOR SUMMARY ANALYSIS

| Group Name | Cost Centers (1) |
|---------------------------------|------------------|
| . Director's Office | 100 |
| . Conferences/PR | 110 ~ 140 |
| . Services (Scientific) | 150 ~ 180 |
| . Administration | 200 ~ 290 |
| Research Programs | |
| . Energy | 510 ~ 570 |
| . Food/Agriculture | 610 ~ 630 |
| Research Areas | |
| . Resources/Environment | 650 ~ 700 |
| . Human Settlement and Services | 730 ~ 740 |
| . Management and Technology | 770 ~ 790 |
| . System and Decision Sciences | 810 ~ 830 |
| General Research | 850 |

(1) All cost center numbers were converted to the new classification as of January 1977 to provide for data consolidation.

FIGURE 2.1: SELECTED COMMUNICATION MODES COMPARED BY EXPENDITURE, OUTPUT IN WORDS, AND COST PER WORD



2.1a: Percentage of expenditure by mode.

2.1b: Percentage of words (per month) by mode.

2.1c: Cost per word for different modes *

* Note that this does not take into account staff time and expenses to create the words (e.g. drafting, typing) but only to transmit them via a particular mode, therefore staff time is estimated for telephone, travel, workshops and visitors, but not for reports.

- (1)
$$\frac{(\text{Telex Co.}) + (\text{European Telex Co.}) + (\text{Night Letter Co.}) + (\text{Telegram Co.})}{(\text{Telex Wo.}) + (\text{European Telex Wo.}) + (\text{Night Letter Wo.}) + (\text{Telegram Wo.})}$$
- (2)
$$\frac{(\text{Telephone Expenditure}) + (\text{No. of Calls}) \times (6 \text{ min/Call}) \times (\text{Staff Costs/min})}{(\text{Words Transferred by Telephone})}$$
- (3)
$$\frac{(\text{Travel Expenditure}) + (\text{Days travelled}) \times (\text{Staff Costs/day})}{(\text{Words Transferred when Travelling})}$$
- (4)
$$\frac{(\text{Costs/Visitor}) \times (\text{No. of Visitors}) + (\text{Visitor-days}) \times (6 \text{ hrs/day}) \times (\text{Staff Costs/hr})}{(\text{Words Transferred to Visitors})}$$
- (5)
$$\frac{(\text{Mail Expenditure}) - (\text{Report-mailing Expenditure})}{(\text{Words Transferred by Mail})}$$
- (6)
$$\frac{(\text{Expenditure/Workshop}) \times (\text{Workshops/year})}{(\text{Words/Workshop-day}) \times (\text{Avg. No. of Attendees/Worksh.}) \times (\text{Workshop-days})}$$
- (8)
$$\frac{(\text{Publication Expenditure}) + (\text{Mailing Costs for Publications})}{(\text{Words Published})}$$

FIGURE 2.2: MONTHLY FLUCTUATION OF COMMUNICATION MODE USAGE

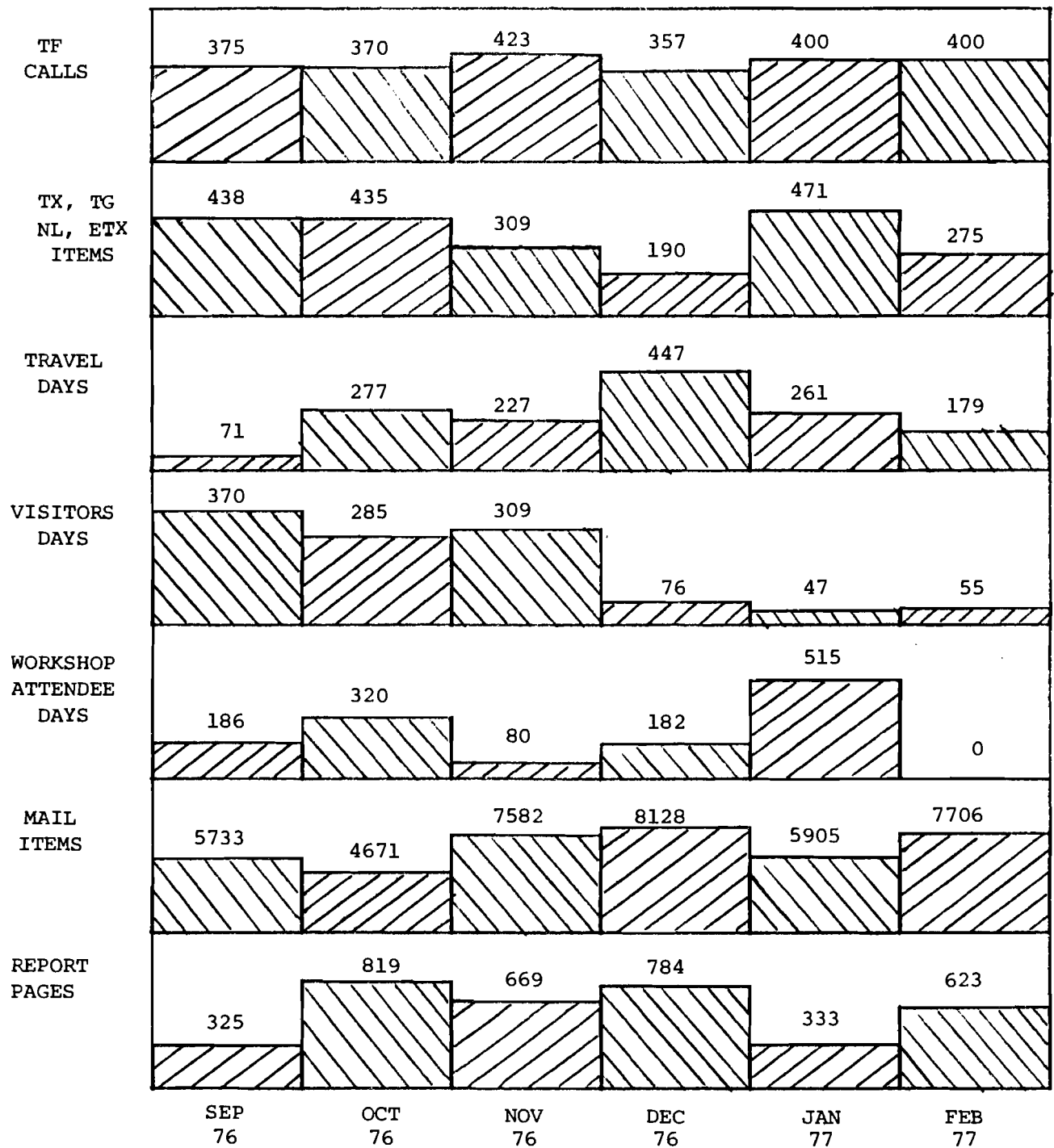


FIGURE 2.3: PROPORTION OF COMMUNICATION ACTIVITY BY EACH COST CENTER GROUPING (WORDS TRANSFERRED AND AS)

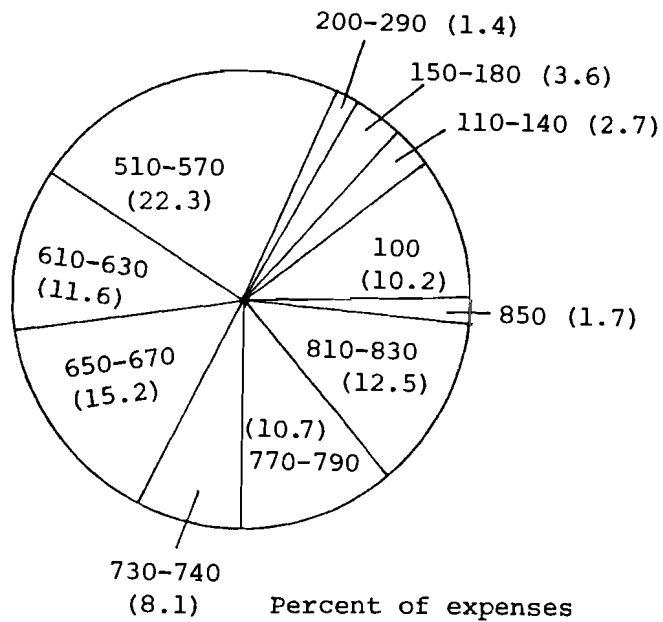
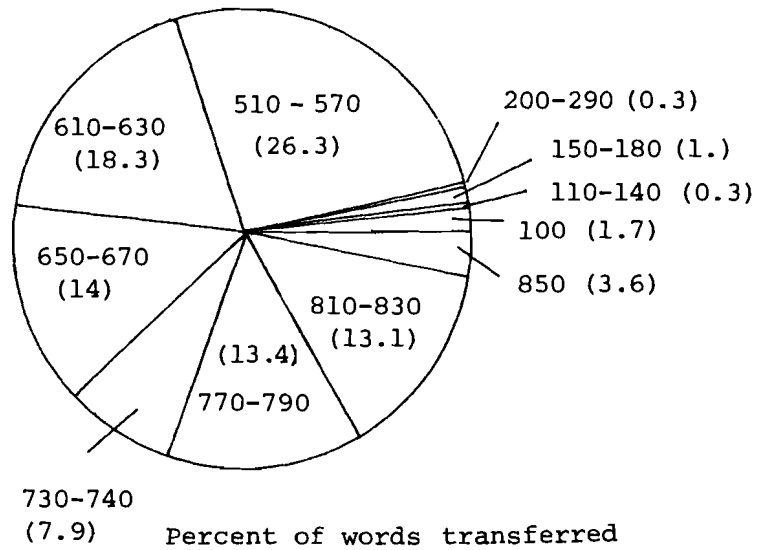
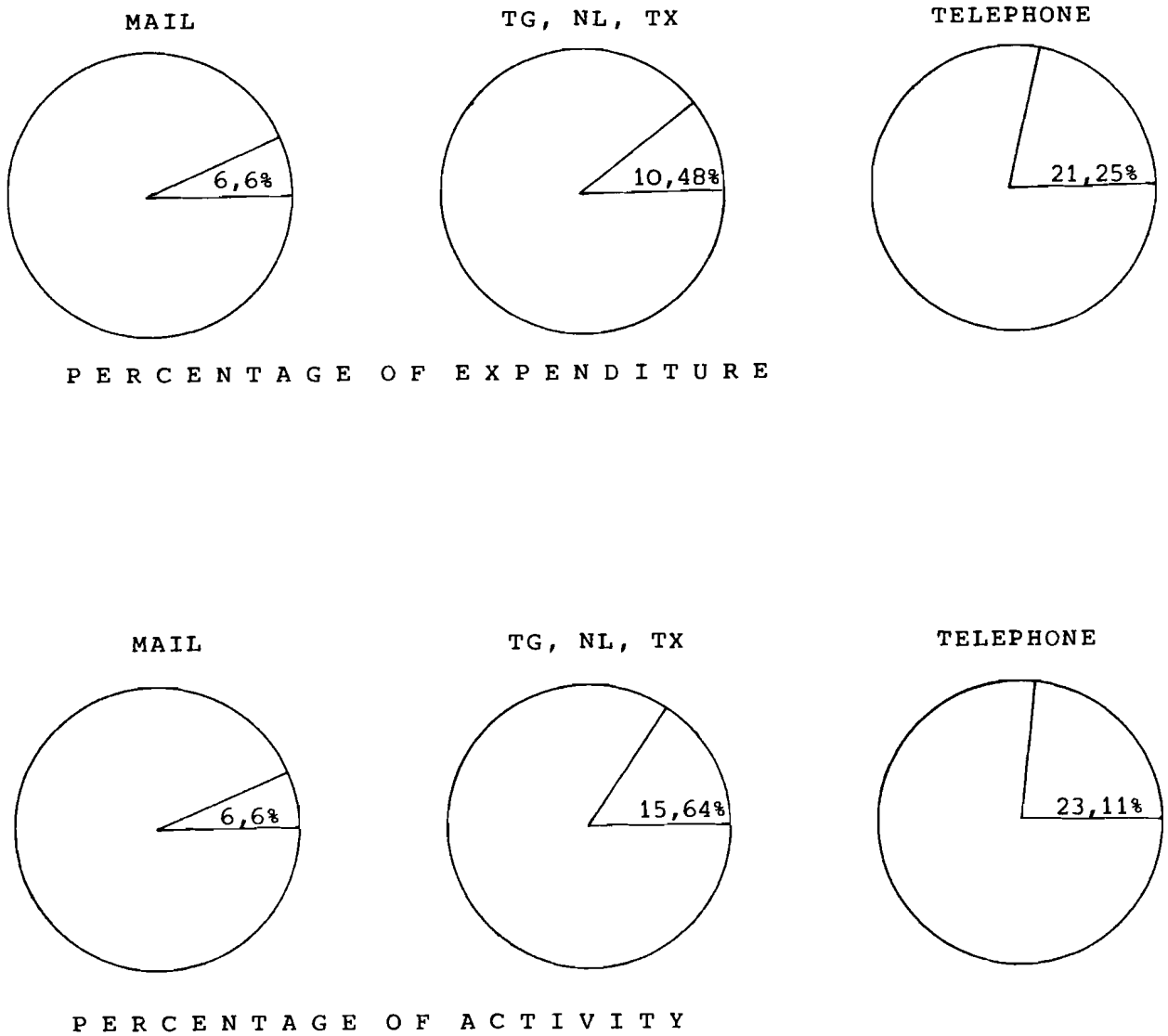


FIGURE 2.4: PROPORTION OF EXPENDITURE AND ACTIVITY
FOR SELECTED COMMUNICATION MODES FOR PRIVATE STAFF USAGE



APPENDICES

The appendices in this section contain the detailed analysis of the sample data for each mode of communication. Each appendix is divided into three sections: (1) an overall summary for that mode, (2) a summary by month, and (3) a summary by cost center. In addition, for certain modes private usage is also analyzed. These listings show values by country for length (e.g. days, words, minutes), cost (total), number (amount of usage), average length per usage and average cost per usage. In addition, for the data by cost center and the data for the entire sample the monthly average cost and amount of usage are shown. Special cost center numbers used include: 0 for summed data across all centers, 1 for private expenditures and 2 for visitors service.

APPENDIX A

TELEPHONE

SAMPLE DATA :

By Country for the Whole Period and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period
Private


```

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 0

monthly average: cost = 48945.83 number = 484.0

country length in units costs in as number of tel-calls avg length tel-call avg cost tel-call
Australia 13.0 195.00 1.0 13.0 195.00
Austria 57092.0 22537.00 456.0 125.2 49.42
Belgium 12484.0 3020.00 37.0 337.4 81.62
Brazil 4.0 90.00 1.0 4.0 90.00
Bulgaria 1302.0 5279.00 35.0 37.2 150.80
Canada 4.0 283.00 1.0 4.0 283.00
CSSR 6559.0 2496.00 41.0 160.0 60.88
Denmark 2892.0 897.00 12.0 241.0 74.75
Finland 2849.0 471.00 7.0 407.0 67.29
France 100448.0 27070.00 336.0 299.0 80.57
FRG 199555.0 65433.00 876.0 229.4 75.21
GDR 4812.0 2566.00 19.0 253.3 135.05
Hungary 22731.0 4985.00 80.0 284.1 62.31
India 4.0 396.00 1.0 4.0 396.00
Iran 12.0 714.00 1.0 12.0 714.00
Ireland 3.0 104.00 1.0 3.0 104.00
Italy 32759.0 10523.00 124.0 264.2 84.86
Japan 5.0 546.00 1.0 5.0 546.00
Luxembur 2680.0 593.00 11.0 243.6 53.91
Mexico 5.0 420.00 1.0 5.0 420.00
Netherla 26987.0 6328.00 70.0 385.5 90.40
Norway 7101.0 1705.00 20.0 355.0 85.25
Poland 25750.0 6636.00 86.0 299.4 77.16
Spain 214.0 44.00 1.0 214.0 44.00
Swazilan 4.0 552.00 1.0 4.0 552.00
Sweden 6569.0 1622.00 25.0 262.8 64.88
Switzerl 34598.0 10111.00 151.0 229.1 66.96
UK 77679.0 26569.00 270.0 287.7 98.40
USA 1444.0 67280.00 124.0 11.6 542.58
USSR 2631.0 21499.00 112.0 23.5 191.96
Yugoslav 1429.0 2712.00 8.0 178.6 339.00
*****
overall 630619.0 293675.00 2904.0 217.2 101.13
data
*****

```

```

*****
period : Oct 76
type of communication : tel-call
for cost center : 0

country      length in  costs      number of  avg length  avg cost
              units      in as      tel-calls  tel-call   tel-call
Austria      11740.0    4742.00    76.0       154.5      62.39
Belgium      1004.0     350.00     4.0        251.0      87.50
Bulgaria     36.0       561.00     7.0         5.1       80.74
Canada       4.0        283.00     1.0         4.0       283.00
CSSR         3143.0     791.00    12.0        261.9      65.92
France       26141.0    4070.00    50.0        402.8      81.40
FRG          33169.0    9483.00   132.0        251.3      71.84
GDR          1424.0     210.00     4.0         356.0      52.50
Hungary      3336.0     685.00    14.0        237.9      48.93
Ireland      3.0        104.00     1.0         3.0       104.00
Italy        3650.0     1298.00    16.0        228.1      81.13
Netherla    12845.0    2820.00    28.0        458.8     100.71
Poland       4333.0     901.00    13.0        333.3      69.31
Switzerl    7301.0     2096.00    25.0        292.0      83.84
UK          13598.0    2857.00    34.0        399.9      84.03
USSR        215.0     9169.00    26.0         8.3       352.65
USSR        143.0     3810.00    19.0         7.5       200.53

*****
overall      116079.0    44230.00    462.0       251.3      95.74
data
*****

```

```

*****
period : Sep 76
type of communication : tel-call
for cost center : 0

country      length in  costs      number of  avg length  avg cost
              units      in as      tel-calls  tel-call   tel-call
Austria      10087.0    2217.00    71.0       142.1      31.23
Belgium      2499.0     539.00     6.0        416.5      89.83
Bulgaria     32.0       795.00     6.0         5.3       132.50
CSSR        1305.0     725.00     9.0        145.0      80.56
Denmark      1296.0     259.00     5.0        259.2      51.80
Finland      630.0     142.00     2.0        315.0      71.00
France       18463.0    3707.00    32.0        577.0     115.84
FRG          39965.0    8263.00   167.0        239.3      49.48
GDR          536.0      160.00     1.0         536.0     160.00
Hungary      5269.0    1082.00    21.0        250.9      51.52
Italy        4263.0     721.00     9.0        473.7      80.11
Luxembur     825.0     165.00     3.0        275.0      55.00
Netherla    4536.0     977.00    13.0        348.9      75.15
Poland       7954.0     1864.00    19.0        418.6      93.11
Sweden       2997.0     622.00     6.0        499.5     103.67
Switzerl    7044.0     1453.00    26.0        270.9      55.88
UK          14431.0    3153.00   144.0        400.9      97.58
USSR         448.0     29251.00  1083.37      16.6     1083.37
USSR         48.0      1500.00    8.0         6.0       187.50
Yugoslavl   206.0      48.00     1.0        206.0      48.00

*****
overall      122831.0    57643.00    468.0       262.5     123.17
data
*****

```

| | | | | | | | | | | | | | | | | | | | | |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|--|----------------------------------|--------------------|----------------|------------------------|------------------------|----------------------|--|-----------|--------------------|----------------|------------------------|------------------------|----------------------|--|
| ***** | | | | | | | period : Nov 76 | | | | | | | ***** | | | | | | |
| ***** | | | | | | | type of communication : tel-call | | | | | | | ***** | | | | | | |
| ***** | | | | | | | for cost center : 0 | | | | | | | ***** | | | | | | |
| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call | | country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call | | country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call | |
| Austria | 10949.0 | 2874.00 | 95.0 | 115.3 | 30.25 | | Australia | 13.0 | 195.00 | 1.0 | 13.0 | 195.00 | | Australia | 13.0 | 195.00 | 1.0 | 13.0 | 195.00 | |
| Belgium | 2507.0 | 686.00 | 9.0 | 278.6 | 76.22 | | Austria | 11795.0 | 2979.00 | 72.0 | 163.8 | 41.38 | | Austria | 11795.0 | 2979.00 | 72.0 | 163.8 | 41.38 | |
| Bulgaria | 1150.0 | 1795.00 | 7.0 | 164.3 | 255.00 | | Belgium | 3943.0 | 863.00 | 7.0 | 563.3 | 123.29 | | Belgium | 3943.0 | 863.00 | 7.0 | 563.3 | 123.29 | |
| CSSR | 764.0 | 313.00 | 8.0 | 95.5 | 39.13 | | Bulgaria | 9.0 | 210.00 | 2.0 | 4.5 | 105.00 | | Bulgaria | 9.0 | 210.00 | 2.0 | 4.5 | 105.00 | |
| Denmark | 363.0 | 73.00 | 2.0 | 181.5 | 36.50 | | CSSR | 394.0 | 140.00 | 2.0 | 197.0 | 70.00 | | CSSR | 394.0 | 140.00 | 2.0 | 197.0 | 70.00 | |
| Finland | 322.0 | 76.00 | 1.0 | 322.0 | 76.00 | | Denmark | 558.0 | 112.00 | 1.0 | 558.0 | 112.00 | | Denmark | 558.0 | 112.00 | 1.0 | 558.0 | 112.00 | |
| France | 20545.0 | 4858.00 | 48.0 | 428.0 | 101.21 | | Finland | 1160.0 | 232.00 | 2.0 | 580.0 | 116.00 | | Finland | 1160.0 | 232.00 | 2.0 | 580.0 | 116.00 | |
| FRG | 31718.0 | 8466.00 | 139.0 | 228.2 | 60.91 | | France | 12068.0 | 2378.00 | 45.0 | 268.2 | 52.84 | | France | 12068.0 | 2378.00 | 45.0 | 268.2 | 52.84 | |
| GDR | 29.0 | 29.00 | 1.0 | 29.0 | 29.00 | | FRG | 50979.0 | 12391.00 | 143.0 | 356.5 | 86.65 | | FRG | 50979.0 | 12391.00 | 143.0 | 356.5 | 86.65 | |
| Hungary | 5824.0 | 1404.00 | 19.0 | 306.5 | 73.99 | | GDR | 1874.0 | 393.00 | 6.0 | 312.3 | 65.50 | | GDR | 1874.0 | 393.00 | 6.0 | 312.3 | 65.50 | |
| Italy | 8434.0 | 1909.00 | 24.0 | 351.4 | 79.54 | | Hungary | 4704.0 | 960.00 | 10.0 | 470.4 | 96.00 | | Hungary | 4704.0 | 960.00 | 10.0 | 470.4 | 96.00 | |
| Japan | 5.0 | 546.00 | 1.0 | 5.0 | 546.00 | | India | 4.0 | 396.00 | 1.0 | 4.0 | 396.00 | | India | 4.0 | 396.00 | 1.0 | 4.0 | 396.00 | |
| Luxembur | 219.0 | 76.00 | 2.0 | 109.5 | 38.00 | | Italy | 7095.0 | 1725.00 | 26.0 | 272.9 | 66.35 | | Italy | 7095.0 | 1725.00 | 26.0 | 272.9 | 66.35 | |
| Netherla | 4527.0 | 956.00 | 10.0 | 452.7 | 95.60 | | Luxembur | 940.0 | 188.00 | 1.0 | 940.0 | 188.00 | | Luxembur | 940.0 | 188.00 | 1.0 | 940.0 | 188.00 | |
| Norway | 4646.0 | 949.00 | 11.0 | 422.4 | 86.27 | | Mexico | 5.0 | 420.00 | 1.0 | 5.0 | 420.00 | | Mexico | 5.0 | 420.00 | 1.0 | 5.0 | 420.00 | |
| Poland | 6228.0 | 1544.00 | 24.0 | 259.5 | 64.33 | | Netherla | 3607.0 | 927.00 | 10.0 | 360.7 | 92.70 | | Netherla | 3607.0 | 927.00 | 10.0 | 360.7 | 92.70 | |
| Sweden | 894.0 | 196.00 | 3.0 | 298.0 | 65.33 | | Norway | 521.0 | 104.00 | 1.0 | 521.0 | 104.00 | | Norway | 521.0 | 104.00 | 1.0 | 521.0 | 104.00 | |
| Switzerl | 6878.0 | 1806.00 | 27.0 | 254.7 | 66.99 | | Poland | 2568.0 | 485.00 | 9.0 | 285.3 | 53.89 | | Poland | 2568.0 | 485.00 | 9.0 | 285.3 | 53.89 | |
| UK | 18531.0 | 5396.00 | 69.0 | 268.6 | 78.05 | | Sweden | 716.0 | 187.00 | 4.0 | 179.0 | 46.75 | | Sweden | 716.0 | 187.00 | 4.0 | 179.0 | 46.75 | |
| USA | 72.0 | 4920.00 | 8.0 | 9.0 | 615.00 | | Switzerl | 6037.0 | 1689.00 | 18.0 | 335.4 | 93.93 | | Switzerl | 6037.0 | 1689.00 | 18.0 | 335.4 | 93.93 | |
| USSR | 1703.0 | 4394.00 | 20.0 | 85.2 | | | | | | | | | | | | | | | | |

period : Jan 77
type of communication : tel-call
for cost center : 0

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 7860.0 | 4486.00 | 81.0 | 97.0 | 55.38 |
| Belgium | 1106.0 | 240.00 | 6.0 | 184.3 | 40.00 |
| Bulgaria | 49.0 | 1527.00 | 8.0 | 6.1 | 190.98 |
| CSSR | 570.0 | 221.00 | 6.0 | 95.0 | 36.83 |
| Denmark | 324.0 | 63.00 | 2.0 | 162.0 | 31.50 |
| France | 13625.0 | 3663.00 | 71.0 | 191.9 | 51.59 |
| FRG | 26571.0 | 8310.00 | 150.0 | 177.1 | 55.40 |
| GDR | 263.0 | 53.00 | 1.0 | 263.0 | 53.00 |
| Hungary | 2931.0 | 741.00 | 13.0 | 225.5 | 57.00 |
| Iran | 12.0 | 714.00 | 1.0 | 12.0 | 714.00 |
| Italy | 6227.0 | 1228.00 | 23.0 | 270.7 | 53.39 |
| Luxembur | 696.0 | 164.00 | 5.0 | 139.2 | 32.80 |
| Netherla | 1259.0 | 537.00 | 7.0 | 179.9 | 76.71 |
| Norway | 611.0 | 169.00 | 1.0 | 611.0 | 169.00 |
| Poland | 1746.0 | 681.00 | 11.0 | 159.7 | 61.91 |
| Spain | 214.0 | 44.00 | 1.0 | 214.0 | 44.00 |
| Swazilan | 4.0 | 552.00 | 1.0 | 4.0 | 552.00 |
| Sweden | 745.0 | 176.00 | 4.0 | 186.3 | 44.00 |
| Switzerl | 3286.0 | 777.00 | 28.0 | 117.4 | 27.75 |
| UK | 9118.0 | 2289.00 | 39.0 | 233.9 | 58.67 |
| USA | 222.0 | 10948.00 | 21.0 | 10.6 | 521.33 |
| USSR | 102.0 | 4719.00 | 19.0 | 5.4 | 248.37 |

```

*****
overall
data
77541.C 42301.C 499.C 155.4 94.77
*****

```

-27-

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 100

monthly average: cost = 1661.83 number = 11.8

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Australia | 13.0 | 195.00 | 1.0 | 13.0 | 195.00 |
| Austria | 1027.0 | 656.00 | 11.0 | 93.4 | 59.64 |
| Belgium | 857.0 | 171.00 | 2.0 | 428.5 | 85.50 |
| Bulgaria | 15.0 | 423.00 | 2.0 | 7.5 | 211.50 |
| CSSR | 530.0 | 115.00 | 4.0 | 132.5 | 28.75 |
| France | 4022.0 | 755.00 | 10.0 | 402.2 | 75.50 |
| FRG | 3373.0 | 811.00 | 10.0 | 337.3 | 81.10 |
| Hungary | 1113.0 | 293.00 | 5.0 | 222.6 | 58.60 |
| Switzerland | 933.0 | 188.00 | 4.0 | 233.3 | 47.00 |
| UK | 927.0 | 1200.00 | 6.0 | 154.5 | 200.00 |
| USA | 63.0 | 3593.00 | 8.0 | 7.9 | 449.13 |
| USSR | 93.0 | 1571.00 | 8.0 | 10.4 | 196.38 |

overall data 12956.0 9971.00 71.0 182.5 140.44

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 110

monthly average: cost = 1269.33 number = 6.8

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 565.0 | 460.00 | 2.0 | 282.5 | 230.00 |
| CSSR | 650.0 | 130.00 | 3.0 | 216.7 | 43.33 |
| Denmark | 171.0 | 300.00 | 1.0 | 171.0 | 300.00 |
| France | 2049.0 | 1684.00 | 9.0 | 227.7 | 187.11 |
| FRG | 418.0 | 471.00 | 3.0 | 139.3 | 157.00 |
| Italy | 378.0 | 75.00 | 3.0 | 126.0 | 25.00 |
| Switzerland | 248.0 | 50.00 | 1.0 | 248.0 | 50.00 |
| UK | 460.0 | 92.00 | 1.0 | 460.0 | 92.00 |
| USA | 11.0 | 94.00 | 1.0 | 11.0 | 94.00 |
| USSR | 507.0 | 4250.00 | 17.0 | 29.8 | 250.59 |

overall data 5457.0 7611.00 41.0 133.1 185.76

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 120

monthly average: cost = 7.67 number = 0.2

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|---------|--------------------|----------------|------------------------|------------------------|----------------------|
| FRG | 232.0 | 46.00 | 1.0 | 232.0 | 46.00 |

overall data 232.0 46.00 1.0 232.0 46.00

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 130

monthly average: cost = 53.00 number = 1.3

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 308.0 | 40.00 | 3.0 | 102.7 | 13.33 |
| Finland | 190.0 | 38.00 | 1.0 | 190.0 | 38.00 |
| France | 421.0 | 84.00 | 1.0 | 421.0 | 84.00 |
| FRG | 236.0 | 47.00 | 1.0 | 236.0 | 47.00 |
| Switzerland | 257.0 | 51.00 | 1.0 | 257.0 | 51.00 |
| UK | 292.0 | 58.00 | 1.0 | 292.0 | 58.00 |

overall data 1704.0 318.00 8.0 213.0 39.75

```

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 150

monthly average: cost = 194.17 number = 2.0

country length in units costs in as tel-calls number of avg length tel-call avg cost
Austria 341.0 69.00 2.0 170.5 34.50
CSSR 338.0 67.00 1.0 338.0 67.00
FRG 341.0 116.00 2.0 170.5 58.00
Hungary 4564.0 913.00 7.0 652.0 130.43
*****
overall data 5584.0 1165.00 12.0 465.3 97.08
*****

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 160

monthly average: cost = 188.17 number = 5.2

country length in units costs in as tel-calls number of avg length tel-call avg cost
Austria 546.0 109.00 4.0 136.5 27.25
Bulgaria 10.0 53.00 2.0 5.0 26.50
France 112.0 51.00 1.0 112.0 51.00
FRG 512.0 78.00 6.0 85.3 13.00
Hungary 532.0 106.00 2.0 266.0 53.00
Netherlands 345.0 69.00 1.0 345.0 69.00
Poland 350.0 126.00 4.0 87.5 31.50
Switzerland 1294.0 32.00 2.0 647.0 16.00
UK 2102.0 463.00 8.0 262.8 57.88
USSR 8.0 42.00 1.0 4.0 42.00
*****
overall data 5811.0 1120.00 31.0 187.5 36.42
*****

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 170

monthly average: cost = 181.83 number = 2.3

country length in units costs in as tel-calls number of avg length tel-call avg cost
Austria 128.0 26.00 1.0 128.0 26.00
Belgium 221.0 43.00 1.0 221.0 43.00
France 116.0 23.00 1.0 116.0 23.00
Poland 254.0 183.00 1.0 254.0 183.00
UK 3631.0 816.00 10.0 363.1 81.60
*****
overall data 4350.0 1091.00 14.0 310.7 77.93
*****

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 180

monthly average: cost = 117.33 number = 1.3

country length in units costs in as tel-calls number of avg length tel-call avg cost
Austria 705.0 141.00 1.0 705.0 141.00
France 2499.0 499.00 5.0 499.8 99.80
FRG 228.0 12.00 1.0 228.0 12.00
Netherlands 261.0 52.00 1.0 261.0 52.00
*****
overall data 3693.0 704.00 8.0 461.6 88.00
*****

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*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 200

monthly average: cost = 57.33 number = 1.0

country length in units costs in as tel-calls number of avg length avg cost
Austria 235.0 99.00 3.0 78.3 33.00
FRG 400.0 174.00 2.0 200.0 87.00
USA 2.0 71.00 1.0 2.0 71.00
*****
overall data 637.0 344.00 6.0 106.2 57.33
*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 205

monthly average: cost = 28.50 number = 0.3

country length in units costs in as tel-calls number of avg length avg cost
France 393.0 171.00 2.0 196.5 85.50
*****
overall data 393.0 171.00 2.0 196.5 85.50
*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 210

monthly average: cost = 112.33 number = 2.5

country length in units costs in as tel-calls number of avg length avg cost
Austria 1109.0 338.00 11.0 100.8 30.73
Belgium 654.0 280.00 2.0 327.0 140.00
UK 280.0 56.00 2.0 140.0 28.00
*****
overall data 2043.0 674.00 15.0 136.2 44.92
*****

```

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*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 230

monthly average: cost = 8.83 number = 0.3

country length in units costs in as tel-calls number of avg length avg cost
Austria 74.0 37.00 1.0 74.0 37.00
UK 78.0 16.00 1.0 78.0 16.00
*****
overall data 152.0 53.00 2.0 76.0 26.50
*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 232

monthly average: cost = 14.83 number = 0.3

country length in units costs in as tel-calls number of avg length avg cost
Austria 104.0 21.00 1.0 104.0 21.00
FRG 68.0 68.00 1.0 68.0 68.00
*****
overall data 172.0 89.00 2.0 86.0 44.50
*****

```

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 260
 monthly average: cost = 281.17 number = 10.7
 country length in units costs in as tel-calls avg length tel-call avg cost tel-call
 Austria 6665.0 1369.00 57.0 116.9 24.02
 FRG 183.0 52.00 1.0 183.0 52.00
 GDR 224.0 69.00 1.0 224.0 69.00
 Italy 366.0 74.00 2.0 183.0 37.00
 Switzerl 215.0 8.00 1.0 215.0 8.00
 USA 18.0 100.00 1.0 18.0 100.00
 USSR 2.0 15.00 1.0 2.0 15.00

overall
 data 7673.0 1687.00 64.0 119.9 26.36

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 270
 monthly average: cost = 5.00 number = 0.3
 country length in units costs in as tel-calls avg length tel-call avg cost tel-call
 Austria 152.0 30.00 2.0 76.0 15.00

 overall
 data 152.0 30.00 2.0 76.0 15.00

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 240
 monthly average: cost = 49.17 number = 2.5
 country length in units costs in as tel-calls avg length tel-call avg cost tel-call
 Austria 468.0 93.00 5.0 93.6 18.60
 France 372.0 17.00 1.0 372.0 17.00
 FRG 645.0 100.00 5.0 129.0 20.00
 Switzerl 186.0 6.00 1.0 186.0 6.00
 UK 95.0 35.00 1.0 95.0 35.00
 USA 23.0 44.00 2.0 11.5 22.00

overall
 data 1789.0 295.00 15.0 119.3 19.67

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 250
 monthly average: cost = 87.50 number = 0.3
 country length in units costs in as tel-calls avg length tel-call avg cost tel-call
 Bulgaria 21.0 525.00 2.0 10.5 262.50

 overall
 data 21.0 525.00 2.0 10.5 262.50

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 510

monthly average: cost = 13499.50 number = 152.0

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 4486.0 | 2963.00 | 46.0 | 97.5 | 64.41 |
| Belgium | 2758.0 | 483.00 | 9.0 | 306.4 | 53.67 |
| Bulgaria | 960.0 | 1267.00 | 6.0 | 160.0 | 211.17 |
| CSSR | 748.0 | 176.00 | 3.0 | 249.3 | 58.67 |
| Finland | 496.0 | 5.00 | 1.0 | 486.0 | 5.00 |
| France | 51305.0 | 12101.00 | 153.0 | 335.3 | 79.09 |
| FRG | 105256.0 | 29992.00 | 459.0 | 229.3 | 65.34 |
| Hungary | 1928.0 | 579.00 | 9.0 | 214.2 | 64.33 |
| Italy | 392.0 | 140.00 | 3.0 | 130.7 | 46.67 |
| Netherlands | 8891.0 | 3336.00 | 36.0 | 247.0 | 92.67 |
| Mexico | 5.0 | 420.00 | 1.0 | 5.0 | 420.00 |
| Norway | 12783.0 | 2613.00 | 21.0 | 608.7 | 124.43 |
| Poland | 609.0 | 153.00 | 3.0 | 203.0 | 51.00 |
| Sweden | 1436.0 | 231.00 | 5.0 | 287.2 | 46.20 |
| Switzerland | 878.0 | 185.00 | 2.0 | 439.0 | 92.50 |
| UK | 8561.0 | 2303.00 | 49.0 | 174.7 | 47.00 |
| USA | 11703.0 | 4709.00 | 57.0 | 205.3 | 82.61 |
| USSR | 384.0 | 17522.00 | 32.0 | 12.0 | 547.56 |
| Yugoslavia | 451.0 | 1807.00 | 16.0 | 28.2 | 112.94 |
| Yugoslavia | 94.0 | 12.00 | 1.0 | 94.0 | 12.00 |

 overall
 data 214114.0 80997.00 912.0 234.8 88.81

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 520

monthly average: cost = 11.17 number = 0.2

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|---------|--------------------|----------------|------------------------|------------------------|----------------------|
| FRG | 333.0 | 67.00 | 1.0 | 333.0 | 67.00 |

 overall
 data 333.0 67.00 1.0 333.0 67.00

 period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 290

monthly average: cost = 423.33 number = 6.2

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 1603.0 | 604.00 | 15.0 | 106.9 | 40.27 |
| Bulgaria | 54.0 | 1305.00 | 8.0 | 6.8 | 163.13 |
| France | 463.0 | 124.00 | 3.0 | 154.3 | 34.67 |
| FRG | 1095.0 | 252.00 | 6.0 | 182.5 | 42.00 |
| Hungary | 524.0 | 70.00 | 3.0 | 174.7 | 23.33 |
| Italy | 251.0 | 141.00 | 1.0 | 251.0 | 141.00 |
| Switzerland | 89.0 | 64.00 | 1.0 | 89.0 | 64.00 |

 overall
 data 4079.0 2546.00 37.0 110.2 68.65

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 550

monthly average: cost = 402.67 number = 3.3

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|---------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 36.0 | 50.00 | 1.0 | 36.0 | 50.00 |
| FRG | 4435.0 | 965.00 | 13.0 | 341.2 | 74.23 |
| Norway | 90.0 | 181.00 | 1.0 | 90.0 | 181.00 |
| UK | 1020.0 | 474.00 | 3.0 | 340.0 | 158.00 |
| USSR | 9.0 | 746.00 | 2.0 | 4.5 | 373.00 |

overall data 5590.0 2416.00 20.0 279.5 120.80

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 560

monthly average: cost = 508.67 number = 8.5

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 2512.0 | 510.00 | 6.0 | 418.7 | 85.00 |
| Belgium | 406.0 | 81.00 | 1.0 | 406.0 | 81.00 |
| France | 112.0 | 96.00 | 2.0 | 56.0 | 48.00 |
| FRG | 9387.0 | 1873.00 | 35.0 | 268.2 | 53.51 |
| Italy | 79.0 | 47.00 | 1.0 | 79.0 | 47.00 |
| Switzerland | 486.0 | 220.00 | 1.0 | 486.0 | 220.00 |
| UK | 284.0 | 57.00 | 1.0 | 284.0 | 57.00 |
| USA | 57.0 | 129.00 | 3.0 | 19.0 | 43.00 |
| Yugoslav | 164.0 | 39.00 | 1.0 | 164.0 | 39.00 |

overall data 13437.0 3052.00 51.0 264.5 59.34

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 610

monthly average: cost = 3266.17 number = 22.5

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 2396.0 | 3083.00 | 13.0 | 184.3 | 237.15 |
| Belgium | 81.0 | 160.00 | 1.0 | 81.0 | 160.00 |
| Bulgaria | 180.0 | 180.00 | 1.0 | 180.0 | 180.00 |
| CSSR | 922.0 | 246.00 | 2.0 | 461.0 | 123.00 |
| France | 1976.0 | 811.00 | 10.0 | 197.6 | 81.10 |
| FRG | 8422.0 | 2571.00 | 33.0 | 255.2 | 77.91 |
| GDR | 802.0 | 158.00 | 2.0 | 401.0 | 79.00 |
| Hungary | 3528.0 | 800.00 | 11.0 | 320.7 | 72.73 |
| Ireland | 3.0 | 104.00 | 1.0 | 3.0 | 104.00 |
| Italy | 984.0 | 215.00 | 4.0 | 246.0 | 53.75 |
| Netherla | 1530.0 | 469.00 | 5.0 | 306.0 | 93.80 |
| Norway | 4646.0 | 949.00 | 11.0 | 422.4 | 86.27 |
| Poland | 1365.0 | 665.00 | 7.0 | 195.0 | 95.00 |
| Sweden | 570.0 | 217.00 | 3.0 | 190.0 | 72.33 |
| Switzerl | 1802.0 | 482.00 | 8.0 | 225.3 | 60.25 |
| UK | 3370.0 | 927.00 | 13.0 | 259.2 | 71.31 |
| USA | 115.0 | 7140.00 | 6.0 | 19.2 | 1190.00 |
| USSR | 3.0 | 240.00 | 1.0 | 3.0 | 240.00 |
| Yugoslav | 899.0 | 180.00 | 3.0 | 299.7 | 60.00 |

overall data 33594.0 19597.00 135.0 248.8 145.16

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 650

monthly average: cost = 1364.50 number = 6.0

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| CSSR | 2.0 | 125.00 | 1.0 | 2.0 | 126.00 |
| Denmark | 180.0 | 90.00 | 1.0 | 180.0 | 90.00 |
| Finland | 251.0 | 16.00 | 1.0 | 251.0 | 16.00 |
| France | 275.0 | 162.00 | 4.0 | 68.7 | 40.50 |
| FRG | 2309.0 | 963.00 | 11.0 | 209.9 | 87.55 |
| Hungary | 205.0 | 41.00 | 1.0 | 205.0 | 41.00 |
| Italy | 389.0 | 857.00 | 4.0 | 97.3 | 214.25 |
| Norway | 611.0 | 169.00 | 1.0 | 611.0 | 169.00 |
| Switzerl | 285.0 | 116.00 | 2.0 | 142.5 | 58.00 |
| UK | 1112.0 | 2187.00 | 5.0 | 222.4 | 437.40 |
| USA | 17.0 | 130.00 | 2.0 | 8.5 | 65.00 |
| USSR | 5.0 | 930.00 | 2.0 | 2.5 | 465.00 |
| Yugoslav | 40.0 | 2400.00 | 1.0 | 40.0 | 2400.00 |

overall
 data

5681.0 8187.00 36.0 157.8 227.42

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 670

monthly average: cost = 707.67 number = 5.3

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 157.0 | 367.00 | 3.0 | 52.3 | 122.33 |
| France | 8359.0 | 1615.00 | 7.0 | 1194.1 | 230.71 |
| FRG | 881.0 | 1015.00 | 2.0 | 440.5 | 507.50 |
| Italy | 263.0 | 52.00 | 2.0 | 131.5 | 26.00 |
| Switzerl | 5318.0 | 1197.00 | 18.0 | 295.4 | 66.50 |

overall
 data

14978.0 4245.00 32.0 468.1 132.69

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 680

monthly average: cost = 197.50 number = 1.3

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|---------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 305.0 | 61.00 | 4.0 | 76.3 | 15.25 |
| FRG | 574.0 | 135.00 | 1.0 | 574.0 | 135.00 |
| Iran | 12.0 | 714.00 | 1.0 | 12.0 | 714.00 |
| UK | 752.0 | 275.00 | 2.0 | 376.0 | 137.50 |

overall
 data

1643.0 1185.00 8.0 205.4 148.13

period : Sep 76 - Feb 77
 type of communication : tel-call
 for cost center : 690

monthly average: cost = 32.33 number = 0.3

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 93.0 | 19.00 | 1.0 | 93.0 | 19.00 |
| Bulgaria | 5.0 | 175.00 | 1.0 | 5.0 | 175.00 |

overall
 data

98.0 194.00 2.0 49.0 97.00

period : Sep 76 -- Feb 77
type of communication : tel-call
for cost center : 770

| | | | | |
|------------------|--------|---------|----------|------|
| monthly average: | cost = | 2715.50 | number = | 31.3 |
|------------------|--------|---------|----------|------|

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 5477.0 | 1607.00 | 43.0 | 127.4 | 37.37 |
| Belgium | 1080.0 | 195.00 | 3.0 | 360.0 | 65.00 |
| Bulgaria | 6.0 | 204.00 | 1.0 | 6.0 | 204.00 |
| CSSR | 389.0 | 206.00 | 4.0 | 97.3 | 51.50 |
| France | 4092.0 | 992.00 | 11.0 | 372.0 | 90.18 |
| FRG | 3244.0 | 1112.00 | 19.0 | 170.7 | 58.53 |
| GDR | 530.0 | 160.00 | 1.0 | 530.0 | 160.00 |
| Hungary | 3899.0 | 920.00 | 17.0 | 229.4 | 54.12 |
| Italy | 3146.0 | 737.00 | 11.0 | 286.0 | 67.00 |
| Luxembur | 498.0 | 183.00 | 2.0 | 249.0 | 50.00 |
| Netherla | 990.0 | 100.00 | 3.0 | 330.0 | 61.00 |
| Norway | 150.0 | 8.00 | 1.0 | 150.0 | 8.00 |
| Poland | 10395.0 | 2460.00 | 35.0 | 297.0 | 70.29 |
| Sweden | 105.0 | 45.00 | 1.0 | 105.0 | 45.00 |
| Switzerl | 2145.0 | 637.00 | 9.0 | 238.3 | 70.79 |
| UK | 3260.0 | 1037.00 | 11.0 | 296.4 | 94.27 |
| USA | 75.0 | 4462.00 | 6.0 | 12.5 | 743.67 |
| USSR | 164.0 | 1228.00 | 10.0 | 16.4 | 122.80 |

| | | | | | |
|---------|---------|----------|-------|-------|-------|
| overall | 39645.0 | 16293.00 | 188.0 | 210.9 | 86.66 |
| data | | | | | |

period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 780

| | | | | |
|------------------|--------|-------|----------|-----|
| monthly average: | cost = | 56.83 | number = | 1.0 |
|------------------|--------|-------|----------|-----|

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|-------------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 101.0 | 82.00 | 1.0 | 101.0 | 82.00 |
| Brazil | 4.0 | 90.00 | 1.0 | 4.0 | 90.00 |
| France | 24.0 | 20.00 | 1.0 | 24.0 | 20.00 |
| FRG | 153.0 | 88.00 | 2.0 | 76.5 | 44.00 |
| Switzerland | 106.0 | 61.00 | 1.0 | 106.0 | 61.00 |

| | | | | | |
|--------------|-------|--------|-----|------|-------|
| overall data | 388.0 | 341.00 | 6.0 | 64.7 | 56.83 |
|--------------|-------|--------|-----|------|-------|

period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 73C

| | | | | |
|------------------|--------|---------|----------|------|
| monthly average: | cost = | 1847.67 | number = | 15.2 |
|------------------|--------|---------|----------|------|

| country | length in units | costs in as | number of tel-calls | avg length tel-call | avg cost tel-call |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Austria | 193.0 | 38.00 | 2.0 | 96.5 | 19.00 |
| Belgium | 786.0 | 309.00 | 4.0 | 196.5 | 77.25 |
| Bulgaria | 18.0 | 422.00 | 4.0 | 4.5 | 105.50 |
| CSSR | 103.0 | 635.00 | 5.0 | 20.6 | 127.00 |
| Denmark | 1775.0 | 354.00 | 6.0 | 295.8 | 59.00 |
| Finland | 810.0 | 162.00 | 1.0 | 810.0 | 162.00 |
| France | 763.0 | 275.00 | 2.0 | 381.5 | 137.50 |
| FRG | 2778.0 | 1265.00 | 12.0 | 231.5 | 105.42 |
| Hungary | 858.0 | 101.00 | 2.0 | 429.0 | 50.50 |
| Italy | 113.0 | 13.00 | 1.0 | 113.0 | 13.00 |
| Japan | 5.0 | 546.00 | 1.0 | 5.0 | 546.00 |
| Luxembur | 327.0 | 65.00 | 1.0 | 327.0 | 65.00 |
| Netherla | 2340.0 | 469.00 | 8.0 | 292.5 | 58.63 |
| Norway | 474.0 | 141.00 | 2.0 | 237.0 | 70.50 |
| Poland | 459.0 | 56.00 | 2.0 | 229.5 | 28.00 |
| Spain | 214.0 | 44.00 | 1.0 | 214.0 | 44.00 |
| Switzerl | 532.0 | 106.00 | 2.0 | 266.0 | 53.00 |
| UK | 7893.0 | 1618.00 | 21.0 | 375.9 | 77.05 |
| USA | 43.0 | 2874.00 | 6.0 | 7.2 | 479.00 |
| USSR | 46.0 | 1593.00 | 8.0 | 5.3 | 199.13 |

| | | | | | |
|---------|---------|----------|------|-------|--------|
| overall | 20530.0 | 11086.00 | 91.6 | 225.5 | 121.82 |
| data | | | | | |

```

*****
period : Sep 76      ~ Feb 77
type of communication : tel-call
for cost center : 81C

monthly average:  cost =      8706.00      number =      62.0

country      length in      costs      number of      avg length      avg cost
              units      in as      tel-calls      tel-call      tel-call

Austria      1823.0      1146.00      13.0      140.2      88.15
Belgium      525.0      105.00      2.0      262.5      52.50
Bulgaria     22.0      505.00      5.0      4.4      101.00
CSSR         1559.0      551.00      13.0      119.9      42.38
Denmark      766.0      153.00      4.0      191.5      38.25
Finland      350.0      70.00      1.0      350.0      70.00
France       10637.0      4046.00      58.0      193.4      69.76
FRG          19934.0      7561.00      78.0      255.6      96.94
GDR          276.0      1463.00      2.0      138.0      731.50
Hungary      3205.0      687.00      13.0      200.3      42.94
Italy        12459.0      3489.00      33.0      377.5      105.70
Luxembur     940.0      188.00      1.0      946.0      198.00
Netherla     4493.0      1209.00      18.0      249.6      67.17
Norway       521.0      104.00      1.0      521.0      104.00
Poland       4506.0      968.00      13.0      346.6      74.46
Sweden       2118.0      503.00      4.0      529.5      125.75
Switzerl     4529.0      1650.00      16.0      283.1      103.13
UK           11407.0      4493.00      34.0      335.5      131.85
USA          265.0      15149.00      25.0      10.6      605.96
USSR         1205.0      8207.00      35.0      34.4      234.49
*****

overall      81546.0      52236.00      372.0      219.2      140.42
data
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 850

monthly average: cost = 488.50 number = 7.7

country length in units costs number of tel-calls avg length tel-call avg cost tel-call

Austria 592.0 300.00 5.0 118.4 60.00
France 451.0 167.00 4.0 112.8 41.75
FRG 2621.0 654.00 16.0 163.8 40.88
Hungary 333.0 35.00 1.0 333.0 35.00
Netherla 206.0 300.00 1.0 206.0 300.00
Switzerl 201.0 22.00 1.0 201.0 22.00
UK 3875.0 1090.00 15.0 258.3 72.67
USA 3.0 90.00 1.0 3.0 90.00
USSR 4.0 240.00 1.0 4.0 240.00
Yugoslav 26.0 33.00 1.0 26.0 33.00

*****
overall 8312.0 2931.00 46.0 180.7 63.72
data
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : tel-call
for cost center : 1
monthly average: cost = 10399.83 number = 111.8

country length in units costs number of tel-calls avg length tel-call avg cost tel-call
Austria 24891.0 8219.00 199.0 125.1 41.30
Belgium 5116.0 1193.00 12.0 426.3 99.42
Bulgaria 11.0 219.00 3.0 3.7 73.00
Canada 4.0 283.00 1.0 4.0 283.00
CSSR 1318.0 244.00 5.0 263.6 48.80
Finland 762.0 180.00 2.0 381.0 90.00
France 12007.0 3397.00 51.0 235.4 66.61
FRG 31497.0 14945.00 149.0 211.4 100.30
GDR 1052.0 137.00 4.0 263.0 34.25
Hungary 3578.0 879.00 12.0 298.2 73.25
India 4.0 396.00 1.0 4.0 396.00
Italy 5440.0 1488.00 26.0 209.2 57.23
Luxembur 915.0 240.00 7.0 130.7 34.29
Netherla 4039.0 964.00 12.0 336.6 80.33
Poland 6985.0 1947.00 19.0 367.6 102.47
Swazilan 4.0 552.00 1.0 4.0 552.00
Sweden 2898.0 672.00 15.0 193.2 44.80
Switzerl 7411.0 2913.00 33.0 224.6 88.42
UK 25138.0 6976.00 78.0 322.3 89.44
USA 368.0 15882.00 30.0 12.3 529.40
USSR 144.0 620.00 10.0 14.4 62.00
Yugoslav 206.0 48.00 1.0 206.0 48.00
*****
overall 133788.0 62399.00 671.0 199.4 92.99
data
*****

```

APPENDIX B

TELEGRAMS

SAMPLE DATA :

By Country for the Whole Period and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period
Private

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 0

monthly average: cost = 10105.05 number = 41.5

country      length in words      costs      number of      avg length      avg cost
              in as          telegrams    telegram
Austria      348.0      390.50      14.0          24.9          27.89
Belgium      109.0      618.40      4.0           27.3          154.60
Bulgaria     56.0       222.40      1.0           56.0          222.40
CSSR         1020.0     4512.10     20.0          51.0          225.61
Egypt        31.0       265.50      1.0           31.0          265.50
Ethiopia     11.0       134.00      1.0           11.0          134.00
Finland      981.0      4608.90     13.0          75.5          354.53
France       383.0      1751.70     14.0          27.4          125.12
FRG          575.0      2592.80     17.0          33.8          152.52
GDR          458.0      2377.30     9.0           50.9          264.14
Greece       51.0       316.00      2.0           25.5          158.00
Hungary      163.0      737.80      4.0           40.8          184.45
Iran         51.0       514.00      2.0           25.5          257.00
Italy        1203.0     5167.40     24.0          50.1          215.31
Japan        18.0       342.20      1.0           18.0          342.20
Netherland   599.0      2187.40     10.0          59.9          218.74
Poland       397.0      2064.60     11.0          36.1          187.69
Spain        28.0       113.20      2.0           14.0          56.60
Sweden       614.0      3071.20     9.0           68.2          341.24
Switzerl     318.0      1571.30     9.0           35.3          174.59
Tunis       24.0       153.20      1.0           24.0          153.20
UK           637.0      2613.80     23.0          27.7          113.86
USA         1440.0     19321.00    41.0          35.1          471.24
USSR         680.0      4373.40     15.0          45.3          291.56
Venezuel     26.0       605.20      1.0           26.0          605.20
*****

overall
data      10221.0      60630.30      249.0      41.0      243.50
*****

```


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period : Oct 76
 type of communication : telegram
 for cost center : 0

| country | length in words | costs in as | number of telegrams | avg length telegram | avg cost telegram |
|----------|-----------------|-------------|---------------------|---------------------|-------------------|
| Austria | 60.0 | 44.00 | 1.0 | 60.0 | 44.00 |
| CSSR | 384.0 | 1702.90 | 8.0 | 48.0 | 212.86 |
| Egypt | 31.0 | 265.50 | 1.0 | 31.0 | 265.50 |
| Finland | 291.0 | 1150.90 | 4.0 | 72.8 | 287.73 |
| France | 155.0 | 614.50 | 5.0 | 31.0 | 122.90 |
| FRG | 131.0 | 528.10 | 4.0 | 32.8 | 132.03 |
| GDR | 65.0 | 270.50 | 1.0 | 65.0 | 270.50 |
| Iran | 51.0 | 514.00 | 2.0 | 25.5 | 257.00 |
| Italy | 339.0 | 1342.10 | 8.0 | 42.4 | 167.76 |
| Japan | 18.0 | 342.20 | 1.0 | 18.0 | 342.20 |
| Netherla | 136.0 | 538.40 | 3.0 | 45.3 | 179.47 |
| Poland | 161.0 | 861.00 | 5.0 | 32.2 | 172.20 |
| Spain | 12.0 | 48.80 | 1.0 | 12.0 | 48.80 |
| Sweden | 101.0 | 399.90 | 2.0 | 50.5 | 199.95 |
| Switzerl | 88.0 | 349.20 | 2.0 | 44.0 | 174.60 |
| UK | 293.0 | 1162.70 | 9.0 | 32.6 | 129.19 |
| USA | 156.0 | 1887.90 | 6.0 | 26.0 | 314.65 |
| USSR | 61.0 | 382.20 | 2.0 | 30.5 | 191.10 |

| | | | | | |
|--------------|--------|----------|------|------|--------|
| overall data | 2533.0 | 12404.80 | 65.0 | 39.0 | 190.84 |
|--------------|--------|----------|------|------|--------|

period : Sep 76
 type of communication : telegram
 for cost center : 0

| country | length in words | costs in as | number of telegrams | avg length telegram | avg cost telegram |
|----------|-----------------|-------------|---------------------|---------------------|-------------------|
| Austria | 64.0 | 68.00 | 3.0 | 21.3 | 22.67 |
| Bulgaria | 56.0 | 222.40 | 1.0 | 56.0 | 222.40 |
| CSSR | 369.0 | 1405.10 | 7.0 | 52.7 | 200.73 |
| Finland | 110.0 | 435.00 | 1.0 | 110.0 | 435.00 |
| France | 65.0 | 259.50 | 3.0 | 21.7 | 86.50 |
| FRG | 55.0 | 208.50 | 2.0 | 27.5 | 104.25 |
| GDR | 30.0 | 236.00 | 1.0 | 30.0 | 236.00 |
| Greece | 51.0 | 316.00 | 2.0 | 25.5 | 158.00 |
| Hungary | 52.0 | 206.80 | 1.0 | 52.0 | 206.80 |
| Italy | 374.0 | 1476.60 | 5.0 | 74.8 | 295.32 |
| Netherla | 31.0 | 122.90 | 1.0 | 31.0 | 122.90 |
| Poland | 88.0 | 402.00 | 2.0 | 44.0 | 201.00 |
| Sweden | 22.0 | 87.80 | 1.0 | 22.0 | 87.80 |
| UK | 260.0 | 1042.00 | 9.0 | 28.9 | 115.78 |
| USA | 328.0 | 3932.50 | 8.0 | 41.0 | 497.81 |
| USSR | 212.0 | 1326.40 | 4.0 | 53.0 | 331.60 |

| | | | | | |
|--------------|--------|----------|------|------|--------|
| overall data | 2167.0 | 11797.50 | 51.0 | 42.5 | 231.32 |
|--------------|--------|----------|------|------|--------|

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period : Dec 76
 type of communication : telegram
 for cost center : 0

| country | length in words | costs in as | number of telegrams | avg length telegram | avg cost telegram |
|----------|-----------------|-------------|---------------------|---------------------|-------------------|
| Austria | 122.0 | 141.00 | 5.0 | 24.4 | 28.20 |
| CSSR | 29.0 | 115.10 | 1.0 | 29.0 | 115.10 |
| France | 37.0 | 146.30 | 1.0 | 37.0 | 146.30 |
| FRG | 161.0 | 637.90 | 5.0 | 32.2 | 127.58 |
| GDR | 120.0 | 498.00 | 2.0 | 60.0 | 249.00 |
| Italy | 106.0 | 421.40 | 3.0 | 35.3 | 140.47 |
| Poland | 32.0 | 146.00 | 1.0 | 32.0 | 146.00 |
| Spain | 16.0 | 64.40 | 1.0 | 16.0 | 64.40 |
| Sweden | 31.0 | 122.90 | 1.0 | 31.0 | 122.90 |
| Switzerl | 21.0 | 83.90 | 1.0 | 21.0 | 83.90 |
| UK | 15.0 | 60.50 | 1.0 | 15.0 | 60.50 |
| USA | 126.0 | 1739.00 | 4.0 | 31.5 | 434.75 |
| USSR | 116.0 | 725.20 | 3.0 | 39.7 | 241.73 |
| Venezuel | 26.0 | 605.20 | 1.0 | 26.0 | 605.20 |

| | | | | | |
|--------------|-------|---------|------|------|--------|
| overall data | 958.0 | 5506.80 | 30.0 | 31.9 | 183.56 |
|--------------|-------|---------|------|------|--------|

period : Nov 76
 type of communication : telegram
 for cost center : 0

| country | length in words | costs in as | number of telegrams | avg length telegram | avg cost telegram |
|----------|-----------------|-------------|---------------------|---------------------|-------------------|
| Austria | 46.0 | 73.50 | 2.0 | 23.0 | 36.75 |
| CSSR | 34.0 | 134.60 | 1.0 | 34.0 | 134.60 |
| Ethiopia | 11.0 | 134.00 | 1.0 | 11.0 | 134.00 |
| Finland | 150.0 | 593.00 | 2.0 | 75.0 | 296.50 |
| France | 32.0 | 199.00 | 2.0 | 16.0 | 99.50 |
| FRG | 47.0 | 194.70 | 1.0 | 47.0 | 194.70 |
| Hungary | 58.0 | 230.20 | 1.0 | 58.0 | 230.20 |
| Italy | 143.0 | 565.70 | 3.0 | 47.7 | 188.57 |
| Netherla | 69.0 | 275.20 | 2.0 | 34.5 | 137.60 |
| Sweden | 82.0 | 323.80 | 1.0 | 82.0 | 323.80 |
| Switzerl | 26.0 | 103.40 | 1.0 | 26.0 | 103.40 |
| UK | 24.0 | 95.60 | 1.0 | 24.0 | 95.60 |
| USA | 127.0 | 1532.80 | 4.0 | 31.8 | 383.20 |
| USSR | 19.0 | 119.80 | 1.0 | 19.0 | 119.80 |

| | | | | | |
|--------------|-------|---------|------|------|--------|
| overall data | 868.0 | 4575.30 | 23.0 | 37.7 | 198.97 |
|--------------|-------|---------|------|------|--------|

APPENDIX B: Telegrams

- 1 -

```

*****
period : Jan 77
type of communication : telegram
for cost center : 0

country      length in words  costs in as  number of  avg length  avg cost
               telegram      telegrams    telegram    telegram    telegram
Austria      38.0      43.00      2.0      19.0      21.50
CSSR         142.0     803.20     2.0      71.0     401.60
Finland      430.0     2430.00    6.0      71.7     405.00
France       94.0      532.40     3.0      31.3     177.47
FRG          139.0     785.40     4.0      34.8     196.60
GDR          213.0     1202.80    2.0      53.3     300.70
Hungary      224.0     1264.40    4.0      26.5     150.40
Italy        326.0     1040.70    3.0      108.7    346.90
Netherla     29.0      164.40     1.0      29.0     164.40
Poland       338.0     1910.80    3.0      112.7    636.93
Sweden       95.0      536.00     2.0      47.5     268.00
Switzerl     32.0      183.20     2.0      16.0     91.60
UK           590.0     8391.40    16.0     36.9     524.46
USA          94.0      652.60     2.0      47.0     326.30
USSR

*****
overall      2837.0    20242.10    56.0     50.7     361.47
data

*****
period : Feb 77
type of communication : telegram
for cost center : 0

country      length in words  costs in as  number of  avg length  avg cost
               telegram      telegrams    telegram    telegram    telegram
Austria      18.0      21.00      1.0      18.0     21.00
Belgium      109.0     618.40     4.0      27.3     154.60
CSSR         62.0     351.20     1.0      62.0     351.20
FRG          42.0     237.20     1.0      42.0     237.20
GDR          30.0     170.00     1.0      30.0     170.00
Italy        17.0      97.20      1.0      17.0     97.20
Netherla     37.0     209.20     1.0      37.0     209.20
Poland       87.0     491.20     2.0      43.5     245.60
Sweden       40.0     226.00     1.0      40.0     226.00
Switzerl     88.0     498.80     3.0      29.3     166.27
Tunis       24.0     153.20     1.0      24.0     153.20
UK           13.0      74.80      1.0      13.0     74.80
USA          113.0     1787.40    3.0      37.7     595.80
USSR        178.0     1167.20    3.0      59.3     389.07

*****
overall      858.0     6102.80    24.0     35.8     254.28
data

*****

```

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```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 100

monthly average: cost = 945.57 number = 3.7

country length in words costs in as telegrams avg length telegram avg cost telegram
Austria 60.0 44.00 1.0 60.0 44.00
Belgium 65.0 368.00 2.0 32.5 184.00
CSSR 72.0 284.80 2.0 36.0 142.40
Finland 146.0 577.40 2.0 73.0 288.70
Italy 45.0 177.50 1.0 45.0 177.50
Netherla 40.0 158.00 1.0 40.0 158.00
Switzerl 146.0 678.00 4.0 36.5 169.50
UK 134.0 530.60 4.0 33.5 132.65
USA 224.0 2855.10 5.0 44.8 571.02
*****
overall 932.0 5673.40 22.0 42.4 257.88
data
*****

period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 110

monthly average: cost = 1067.87 number = 3.5

country length in words costs in as telegrams avg length telegram avg cost telegram
CSSR 162.0 823.10 3.0 54.0 274.37
Finland 431.0 1749.10 6.0 71.8 291.52
Italy 330.0 1303.00 3.0 110.0 434.33
Netherla 244.0 1147.50 4.0 61.0 286.88
Sweden 259.0 1214.50 4.0 54.8 303.63
Switzerl 30.0 170.00 1.0 30.0 170.00
*****
overall 1456.0 6407.20 21.0 69.3 305.10
data
*****

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 130

monthly average: cost = 1264.15 number = 5.8

country length in words costs in as telegrams avg length telegram avg cost telegram
CSSR 284.0 1154.00 7.0 40.6 164.86
Finland 49.0 276.40 1.0 49.0 276.40
France 72.0 346.00 2.0 36.0 173.00
FRG 219.0 1083.70 6.0 36.5 180.62
GDR 165.0 857.00 4.0 41.3 214.25
Hungary 40.0 226.00 1.0 40.0 226.00
Italy 236.0 1143.20 6.0 39.3 190.53
Poland 31.0 141.50 1.0 31.0 141.50
UK 64.0 253.60 2.0 32.0 126.80
USA 133.0 1797.90 4.0 33.3 449.48
USSR 44.0 305.60 1.0 44.0 305.60
*****
overall 1337.0 7584.90 35.0 38.2 216.71
data
*****

period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 160

monthly average: cost = 51.73 number = 0.3

country length in words costs in as telegrams avg length telegram avg cost telegram
Poland 61.0 310.40 2.0 30.5 155.20
*****
overall 61.0 310.40 2.0 30.5 155.20
data
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 510

monthly average: cost = 980.07 number = 2.2

country length in words costs in as telegrams number of avg length: avg cost
Belgium 28.0 158.80 1.0 28.0 158.80
France 71.0 338.70 2.0 35.5 169.35
FRG 42.0 237.20 1.0 42.0 237.20
USA 332.0 4479.30 7.0 47.4 639.90
USSR 106.0 666.40 2.0 53.0 333.20
*****
overall
data 579.0 5890.40 13.0 44.5 452.34
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 560

monthly average: cost = 44.22 number = 0.2

country length in words costs in as telegrams number of avg length: avg cost
UK 67.0 265.30 1.0 67.0 265.30
*****
overall
data 67.0 265.30 1.0 67.0 265.30
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 210

monthly average: cost = 19.02 number = 0.3

country length in words costs in as telegrams number of avg length: avg cost
Austria 13.0 18.50 1.0 13.0 18.50
UK 24.0 95.60 1.0 24.0 95.60
*****
overall
data 37.0 114.10 2.0 18.5 57.05
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 220

monthly average: cost = 39.95 number = 0.7

country length in words costs in as telegrams number of avg length: avg cost
Austria 81.0 76.50 3.0 27.0 25.50
USSR 26.0 163.20 1.0 26.0 163.20
*****
overall
data 107.0 239.70 4.0 26.8 59.92
*****

```

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```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 670

monthly average: cost = 163.73 number = 0.3

country length in words costs number of avg length avg cost
          in as telegrams telegram telegram
USA      47.0 982.40 2.0 23.5 491.20
*****
overall
data      47.0 982.40 2.0 23.5 491.20
*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 680

monthly average: cost = 81.60 number = 0.2

country length in words costs number of avg length avg cost
          in as telegrams telegram telegram
USA      23.0 489.60 1.0 23.0 489.60
*****
overall
data      23.0 489.60 1.0 23.0 489.60
*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 730

monthly average: cost = 125.13 number = 0.5

country length in words costs number of avg length avg cost
          in as telegrams telegram telegram
Belgium  16.0 91.60 1.0 16.0 91.60
FRG      47.0 194.70 1.0 47.0 194.70
USA      37.0 464.50 1.0 37.0 464.50
*****
overall
data      16.0 91.60 1.0 16.0 91.60
*****
*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 610

monthly average: cost = 553.78 number = 2.5

country length in words costs number of avg length avg cost
          in as telegrams telegram telegram
Austria  15.0 19.50 1.0 15.0 19.50
FRG      46.0 190.60 1.0 46.0 190.60
GDR      30.0 236.00 1.0 30.0 236.00
Iran     51.0 514.00 2.0 25.5 257.00
Netherla 31.0 122.90 1.0 31.0 122.90
Switzerl 26.0 103.40 1.0 26.0 103.40
UK       87.0 343.30 2.0 43.5 171.65
USA     85.0 1005.80 3.0 28.3 335.27
USSR    126.0 787.20 3.0 42.0 262.40
*****
overall
data     497.0 3322.70 15.0 33.1 221.51
*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 650

monthly average: cost = 577.35 number = 2.5

country length in words costs number of avg length avg cost
          in as telegrams telegram telegram
France   96.0 380.40 3.0 32.0 126.80
FRG     29.0 115.10 1.0 29.0 115.10
Italy    65.0 257.50 2.0 32.5 128.75
Netherla 27.0 107.30 1.0 27.0 107.30
Poland   69.0 314.50 2.0 34.5 157.25
Sweden   36.0 142.40 1.0 36.0 142.40
UK       31.0 122.90 1.0 31.0 122.90
USA     90.0 1418.80 3.0 30.0 472.93
Venezuel 26.0 605.20 1.0 26.0 605.20
*****
overall
data     469.0 3454.10 15.0 31.3 230.94
*****

```

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```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 770

monthly average: cost = 459.27 number = 1.7

country length in words costs in as telegrams avg length telegram avg cost
France 24.0 136.40 1.0 24.0 136.40
Hungary 58.0 230.20 1.0 58.0 230.20
Netherla 1.0 7.00 1.0 1.0 7.00
Poland 87.0 491.20 2.0 43.5 245.60
Switzerl 95.0 536.00 2.0 47.5 268.00
USA 68.0 854.00 2.0 34.0 427.00
USSR 72.0 500.80 1.0 72.0 500.80
*****
overall 405.0 2755.60 10.0 40.5 275.56
data
*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 910

monthly average: cost = 2462.18 number = 8.0

country length in words costs in as telegrams avg length telegram avg cost
Bulgaria 56.0 222.40 1.0 56.0 222.40
CSSR 502.0 2250.20 8.0 62.8 281.28
Finland 338.0 1908.80 3.0 112.7 636.27
France 38.0 150.20 1.0 38.0 150.20
FRG 92.0 364.80 3.0 30.7 121.60
GDR 233.0 1114.30 3.0 77.7 371.43
Greece 29.0 228.20 1.0 29.0 228.20
Hungary 52.0 206.80 1.0 52.0 206.80
Italy 462.0 1997.80 9.0 51.3 221.98
Netherla 256.0 644.70 2.0 128.0 322.35
Poland 98.0 447.00 2.0 49.0 223.50
Sweden 319.0 1714.30 4.0 79.8 428.58
UK 23.0 91.70 1.0 23.0 91.70
USA 129.0 1601.50 3.0 43.0 533.83
USSR 287.0 1830.40 6.0 47.8 305.07
*****
overall 2914.0 14773.10 48.0 60.7 307.77
data

```

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 850

monthly average: cost = 70.70 number = 0.5

country length in words costs in as telegrams avg length telegram avg cost
FRG 34.0 134.60 1.0 34.0 134.60
GDR 30.0 170.00 1.0 30.0 170.00
UK 21.0 119.60 1.0 21.0 119.60
*****
overall 85.0 424.20 3.0 28.3 141.40
data
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : telegram
for cost center : 1

monthly average: cost = 1198.73 number = 9.7

country length in words costs number of telegrams avg length avg cost
country words in as telegrams telegram telegram
Austria 179.0 232.00 8.0 22.4 29.00
Egypt 31.0 265.50 1.0 31.0 265.50
Ethiopia 11.0 134.00 1.0 11.0 134.00
Finland 17.0 97.20 1.0 17.0 97.20
France 82.0 400.00 5.0 16.4 80.00
FRG 66.0 272.10 3.0 22.0 90.70
Greece 22.0 87.80 1.0 22.0 87.80
Hungary 13.0 74.80 1.0 13.0 74.80
Italy 65.0 288.40 3.0 21.7 96.13
Japan 18.0 342.20 1.0 18.0 342.20
Poland 51.0 360.00 2.0 25.5 180.00
Spain 28.0 113.20 2.0 14.0 56.60
Switzerl 21.0 83.90 1.0 21.0 83.90
Tunis 24.0 153.20 1.0 24.0 153.20
UK 186.0 796.20 10.0 18.6 79.62
USA 272.0 3372.10 10.0 27.2 337.21
USSR 19.0 119.80 1.0 19.0 119.80
*****

overall 1105.0 7192.40 52.0 21.3 138.32
data
*****

```


APPENDIX C

NIGHT LETTERS

SAMPLE DATA :

By Country for the Whole Period and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period
Private

```

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 0

monthly average: cost = 7215.53 number = 28.3

country length in words costs number of avg length avg cost
in as nightlets nightlet nightlet

Argentina 37.0 366.50 1.0 37.0 366.50
Australia 22.0 190.10 1.0 22.0 190.10
Brazil 107.0 949.60 3.0 35.7 316.53
Canada 460.0 3241.90 12.0 38.3 270.16
Goa 22.0 164.80 1.0 22.0 164.80
India 138.0 544.20 1.0 138.0 544.20
Iran 410.0 2199.50 4.0 102.5 549.88
Japan 467.0 4441.40 10.0 46.7 444.14
Mexico 33.0 200.00 1.0 33.0 200.00
NewZeala 99.0 928.70 4.0 24.8 232.18
SriLanka 44.0 279.00 2.0 22.0 139.50
Swazilan 22.0 142.80 1.0 22.0 142.80
USA 4554.0 28886.57 127.0 35.9 227.45
Venezuel 65.0 758.00 2.0 32.5 379.00

*****

overall
data 6480.0 43293.17 170.0 38.1 254.67

*****

```

```

*****
period : Sep 76
type of communication : nightlet
for cost center : 0
*****
country      length in words      costs in as      number of      avg length      avg cost
nightlets      nightlet      nightlet
Brazil        54.0      479.20      1.0      54.0      479.20
Canada       141.0      804.70      3.0      47.0      268.23
Iran         160.0      808.00      1.0      160.0      808.00
Japan        35.0      332.80      1.0      35.0      332.80
USA          861.0      4869.87      20.0      43.0      243.49
Venezuel     34.0      396.40      1.0      34.0      396.40
*****
overall
data      1285.0      7690.97      27.0      47.6      284.95
*****

*****
period : Oct 76
type of communication : nightlet
for cost center : 0
*****
country      length in words      costs in as      number of      avg length      avg cost
nightlets      nightlet      nightlet
Brazil        31.0      274.30      1.0      31.0      274.30
Canada       168.0      1530.30      5.0      33.6      306.06
India        138.0      544.20      1.0      138.0      544.20
Iran         65.0      329.00      1.0      65.0      329.00
Japan        135.0      1283.80      3.0      45.0      427.93
SriLanca     44.0      279.00      2.0      22.0      139.50
USA          858.0      5343.70      22.0      30.0      243.12
Venezuel     31.0      361.60      1.0      31.0      361.60
*****
overall
data      1470.0      9951.40      36.0      40.9      275.43
*****

*****
period : Nov 76
type of communication : nightlet
for cost center : 0
*****
country      length in words      costs in as      number of      avg length      avg cost
nightlets      nightlet      nightlet
Canada        39.0      222.40      1.0      39.0      222.40
Japan         89.0      847.10      2.0      44.5      423.55
USA          730.0      4485.40      22.0      33.2      203.88
*****
overall
data      858.0      5554.90      25.0      34.3      222.20
*****

*****
period : Dec 76
type of communication : nightlet
for cost center : 0
*****
country      length in words      costs in as      number of      avg length      avg cost
nightlets      nightlet      nightlet
Argentina     37.0      366.50      1.0      37.0      366.50
Australi     22.0      190.10      1.0      22.0      190.10
Brazil        22.0      195.60      1.0      22.0      195.60
Canada        29.0      165.90      1.0      29.0      165.90
Japan         208.0      1977.70      4.0      52.0      494.42
USA          654.0      4254.70      20.0      32.7      212.74
*****
overall
data      972.0      7150.50      29.0      34.7      255.38
*****

```

period : Jan 77
 type of communication : nightlet
 for cost center : C

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Goa | 22.C | 164.80 | 1.C | 22.0 | 164.80 |
| Iran | 137.C | 786.90 | 1.C | 137.C | 786.90 |
| Swazilan | 22.C | 142.80 | 1.0 | 22.0 | 142.80 |
| USA | 926.0 | 6239.30 | 25.C | 37.C | 249.57 |

| | | | | | |
|-----------------|--------|---------|------|------|--------|
| overall data | 1107.C | 7333.80 | 28.C | 39.5 | 261.92 |
|-----------------|--------|---------|------|------|--------|

period : Feb 77
 type of communication : nightlet
 for cost center : C

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|----------|--------------------|----------------|------------------------|------------------------|----------------------|
| Canada | 83.C | 518.60 | 2.C | 41.5 | 259.30 |
| Iran | 48.C | 275.60 | 1.C | 48.C | 275.60 |
| Mexico | 33.C | 200.00 | 1.C | 33.C | 200.00 |
| NewZeala | 99.C | 928.70 | 4.C | 24.8 | 232.18 |
| USA | 525.C | 3683.70 | 18.C | 29.2 | 204.93 |

| | | | | | |
|-----------------|-------|---------|------|------|--------|
| overall data | 788.C | 5611.60 | 26.C | 30.3 | 215.83 |
|-----------------|-------|---------|------|------|--------|

```

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 100

monthly average: cost = 980.95 number = 3.2

country length in words costs in as nightlets number of nightlets avg length nightlet avg cost
Brazil 54.0 479.20 250.60 1.0 54.0 479.20
Canada 44.0 250.60 250.60 1.0 44.0 250.60
Japan 141.0 1342.50 3.0 3.0 47.0 447.50
USA 617.0 3813.40 14.0 14.0 44.1 272.39
*****
overall data 856.0 5885.70 19.0 45.1 309.77
*****

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 110

monthly average: cost = 311.80 number = 0.7

country length in words costs in as nightlets number of nightlets avg length nightlet avg cost
Canada 83.0 518.60 2.0 2.0 41.5 259.30
India 138.0 544.20 1.0 1.0 138.0 544.20
Iran 160.0 808.00 1.0 1.0 160.0 808.00
*****
overall data 381.0 1870.80 4.0 95.3 467.70
*****

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 130

monthly average: cost = 435.02 number = 1.7

country length in words costs in as nightlets number of nightlets avg length nightlet avg cost
Brazil 31.0 274.80 1.0 1.0 31.0 274.80
Canada 29.0 165.90 1.0 1.0 29.0 165.90
Japan 59.0 561.60 2.0 2.0 29.5 280.80
Mexico 33.0 200.00 1.0 1.0 33.0 200.00
USA 223.0 1407.80 5.0 5.0 44.6 281.56
*****
overall data 375.0 2610.10 10.0 37.5 261.01
*****

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 180

monthly average: cost = 63.92 number = 0.2

country length in words costs in as nightlets number of nightlets avg length nightlet avg cost
USA 55.0 383.50 1.0 1.0 55.0 383.50
*****
overall data 55.0 383.50 1.0 55.0 383.50
*****

```

period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 510

monthly average: cost = 1311.93 number = 5.3

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|----------|-----------------|-------------|---------------------|---------------------|-------------------|
| Canada | 217.0 | 1240.10 | 5.0 | 43.4 | 248.02 |
| Japan | 35.0 | 332.80 | 1.0 | 35.0 | 332.80 |
| USA | 918.0 | 5902.30 | 25.0 | 36.7 | 236.09 |
| Venezuel | 34.0 | 396.40 | 1.0 | 34.0 | 396.40 |

overall data 1204.0 7871.60 32.0 37.6 245.99

period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 520

monthly average: cost = 70.47 number = 0.2

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| USA | 67.0 | 422.80 | 1.0 | 67.0 | 422.80 |

overall data 67.0 422.80 1.0 67.0 422.80

period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 550

monthly average: cost = 0.58 number = 0.2

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| USA | 55.0 | 3.47 | 1.0 | 55.0 | 3.47 |

overall data 55.0 3.47 1.0 55.0 3.47

period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 210

monthly average: cost = 25.63 number = 0.2

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| USA | 22.0 | 153.80 | 1.0 | 22.0 | 153.80 |

overall data 22.0 153.80 1.0 22.0 153.80

period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 220

monthly average: cost = 169.38 number = 0.7

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| USA | 161.0 | 1016.30 | 4.0 | 40.3 | 254.07 |

overall data 161.0 1016.30 4.0 40.3 254.07

period : Sep 76 - Feb 77
 type of communication : nightlet
 for cost center : 650

monthly average: cost = 579.22 number = 2.0

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|-----------|-----------------|-------------|---------------------|---------------------|-------------------|
| Argentina | 37.0 | 366.50 | 1.0 | 37.0 | 366.50 |
| Japan | 61.0 | 586.50 | 1.0 | 61.0 | 586.50 |
| NewZeala | 76.0 | 712.80 | 3.0 | 25.3 | 237.60 |
| USA | 217.0 | 1453.90 | 6.0 | 36.2 | 242.32 |
| Venezuel | 31.0 | 361.60 | 1.0 | 31.0 | 361.60 |

overall data 422.0 3475.30 12.0 35.2 289.61

period : Sep 76 - Feb 77
 type of communication : nightlet
 for cost center : 670

monthly average: cost = 30.55 number = 0.2

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| USA | 29.0 | 183.30 | 1.0 | 29.0 | 183.30 |

overall data 29.0 183.30 1.0 29.0 183.30

period : Sep 76 - Feb 77
 type of communication : nightlet
 for cost center : 560

monthly average: cost = 166.27 number = 0.5

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| Iran | 65.0 | 329.00 | 1.0 | 65.0 | 329.00 |
| USA | 106.0 | 668.50 | 2.0 | 53.0 | 334.30 |

overall data 171.0 997.50 3.0 57.0 332.53

period : Sep 76 - Feb 77
 type of communication : nightlet
 for cost center : 610

monthly average: cost = 208.27 number = 1.0

| country | length in words | costs in as | number of nightlets | avg length nightlet | avg cost nightlet |
|---------|-----------------|-------------|---------------------|---------------------|-------------------|
| Iran | 48.0 | 275.60 | 1.0 | 48.0 | 275.60 |
| USA | 151.0 | 974.00 | 5.0 | 30.2 | 194.80 |

overall data 199.0 1249.60 6.0 33.2 208.27

```

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 680

monthly average: cost = 131.15 number = 0.2

country length in words costs number of avg length avg cost
in as nightlets nightlet nightlet

Iran 137.0 786.90 1.0 137.0 786.90
*****
overall
data 137.0 786.90 1.0 137.0 786.90
*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 730

monthly average: cost = 107.98 number = 0.5

country length in words costs number of avg length avg cost
in as nightlets nightlet nightlet

USA 112.0 647.90 3.0 37.3 215.97
*****
overall
data 112.0 647.90 3.0 37.3 215.97
*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 770

monthly average: cost = 122.67 number = 0.5

country length in words costs number of avg length avg cost
in as nightlets nightlet nightlet

USA 109.0 736.00 3.0 36.3 245.33
*****
overall
data 109.0 736.00 3.0 36.3 245.33
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 810

monthly average: cost = 1165.50 number = 4.0

country length in words costs number of avg length avg cost
in as nightlets nightlet nightlet

Canada 87.0 1066.70 3.0 29.0 355.57
Japan 171.0 1624.00 3.0 57.0 541.33
USA 685.0 4302.30 18.0 38.1 239.02
*****
overall
data 943.0 6993.00 24.0 39.3 291.38
*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 850

monthly average: cost = 217.10 number = 1.0

country length in words costs number of avg length avg cost
in as nightlets nightlet nightlet

USA 199.0 1302.60 6.0 33.0 217.10
*****
overall
data 198.0 1302.60 6.0 33.0 217.10
*****

```



```

*****
period : Sep 76 - Feb 77
type of communication : nightlet
for cost center : 1
monthly average: cost = 1077.72 number = 6.2

country length in words costs in as nightlets number of nightlets avg length nightlet avg cost nightlet
Australia 22.0 196.10 1.0 22.0 196.10
Brazil 22.0 195.60 1.0 22.0 195.60
Goa 22.0 164.80 1.0 22.0 164.80
NewZeala 23.0 215.90 1.0 23.0 215.90
SriLanca 44.0 279.00 2.0 22.0 139.50
Swazilan 22.0 142.80 1.0 22.0 142.80
USA 795.0 5278.10 30.0 26.5 175.94
*****
overall
data 950.0 6466.30 37.0 25.7 174.76
*****

```

APPENDIX D

EUROPEAN TELEX

SAMPLE DATA :

For All Months and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period

```
*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : C
monthly average: cost = 2985.00 number = 298.5

country length in words costs number of avg length avg cost
Europe 0.0 17910.00 1791.0 0.0 10.00
*****
```

```
*****
period : Dec 76
type of communication : eurtelex
for cost center : 0

country    length in words    costs in as eurtelex    number of eurtelex    avg length eurtelex    avg cost eurtelex
Europe     0.0      1350.00      135.0      0.0      10.00
*****
```

```
*****
period : Jan 77
type of communication : eurtelex
for cost center : 0

country    length in words    costs in as eurtelex    number of eurtelex    avg length eurtelex    avg cost eurtelex
Europe     0.0      4300.00      430.0      0.0      10.00
*****
```

```
*****
period : Feb 77
type of communication : eurtelex
for cost center : 0

country    length in words    costs in as eurtelex    number of eurtelex    avg length eurtelex    avg cost eurtelex
Europe     0.0      2370.00      237.0      0.0      10.00
*****
```

```
*****
period : Sep 76
type of communication : eurtelex
for cost center : 0

country    length in words    costs in as eurtelex    number of eurtelex    avg length eurtelex    avg cost eurtelex
Europe     0.0      3740.00      374.0      0.0      10.00
*****
```

```
*****
period : Oct 76
type of communication : eurtelex
for cost center : 0

country    length in words    costs in as eurtelex    number of eurtelex    avg length eurtelex    avg cost eurtelex
Europe     0.0      3510.00      351.0      0.0      10.00
*****
```

```
*****
period : Nov 76
type of communication : eurtelex
for cost center : 0

country    length in words    costs in as eurtelex    number of eurtelex    avg length eurtelex    avg cost eurtelex
Europe     0.0      2640.00      264.0      0.0      10.00
*****
```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 130

monthly average: cost = 198.33 number = 19.8

country length in words costs number of avg length avg cost
              eurtelex eurtelex eurtelex

Europe 0.0 1190.00 119.0 0.0 10.00
*****

```

```

*****
period : Sep 76      - Feb 77
type of communication : eurtelex
for cost center : 150

monthly average:  cost =      3.33      number =      0.3

country      length in      costs      number of      avg length      avg cost
              words        in as      eurtelexs      eurtelex      eurtelex

Europe      0.0      20.00      2.0      0.0      10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 160

monthly average: cost = 1235.00 number = 123.5

country      length in words      costs      number of      avg length      avg cost
              words          in as      eurtelexs      eurtelex      eurtelex

Europe       0.0      7410.00      741.0      0.0      10.00
*****

```

```

*****
period : Sep 76   - Feb 77
type of communication : eurtelex
for cost center : 100

monthly average:  cost =      148.33      number =      14.8

country      length in      costs      number of      avg length      avg cost
              words      in as      eurtelex      eurtelex      eurtelex
Europe      0.0      890.00      89.0      0.0      10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 110

monthly average:  cost =      280.00      number =      28.00

country      length in      costs      number of      avg length      avg cost
              words      in as      eurtelex      eurtelex      eurtelex
Europe      0.0      1680.00      168.0      0.0      10.00
*****

```

```

*****
period : Sep 76      - Feb 77
type of communication : eurtelex
for cost center : 120

monthly average:  cost =      60.00      number =      6.0

country      length in      costs      number of      avg length      avg cost
              words      in as      eurtelexs      eurtelex      eurtelex

Europe      0.0      360.00      36.0      0.0      10.00
*****

```

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 230

monthly average: cost = 6.67 number = 0.7

| country | length in words | costs in as eurtelex | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|----------------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 40.00 | 4.0 | 0.0 | 10.00 |

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 232

monthly average: cost = 1.67 number = 0.2

| country | length in words | costs in as eurtelex | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|----------------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 10.00 | 1.0 | 0.0 | 10.00 |

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 240

monthly average: cost = 13.33 number = 1.3

| country | length in words | costs in as eurtelex | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|----------------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 80.00 | 8.0 | 0.0 | 10.00 |

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 200

monthly average: cost = 25.00 number = 2.5

| country | length in words | costs in as eurtelex | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|----------------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 150.00 | 15.0 | 0.0 | 10.00 |

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 210

monthly average: cost = 20.00 number = 2.0

| country | length in words | costs in as eurtelex | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|----------------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 120.00 | 12.0 | 0.0 | 10.00 |

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 220

monthly average: cost = 10.00 number = 1.0

| country | length in words | costs in as eurtelex | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|----------------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 60.00 | 6.0 | 0.0 | 10.00 |

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 510

monthly average: cost = 195.00 number = 19.5

country length in words costs number of eurtelexs eurtelex avg cost
Europe 0.0 1170.00 117.0 0.0 10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 560

monthly average: cost = 35.00 number = 3.5

country length in words costs number of eurtelexs eurtelex avg cost
Europe 0.0 210.00 21.0 0.0 10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 610

monthly average: cost = 143.33 number = 14.3

country length in words costs number of eurtelexs eurtelex avg cost
Europe 0.0 860.00 86.0 0.0 10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 250

monthly average: cost = 8.33 number = 0.8

country length in words costs number of eurtelexs eurtelex avg cost
Europe 0.0 50.00 5.0 0.0 10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 260

monthly average: cost = 6.67 number = 0.7

country length in words costs number of eurtelexs eurtelex avg cost
Europe 0.0 40.00 4.0 0.0 10.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 290

monthly average: cost = 46.57 number = 4.7

country length in words costs number of eurtelexs eurtelex avg cost
Europe 0.0 255.00 25.5 0.0 10.00
*****

```

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 730
 monthly average: cost = 18.33 number = 1.8
 country length in words costs number of avg length avg cost
 Europe 0.0 110.00 11.0 0.0 10.00

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 740
 monthly average: cost = 6.67 number = 0.7
 country length in words costs number of avg length avg cost
 Europe 0.0 40.00 4.0 0.0 10.00

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 770
 monthly average: cost = 46.57 number = 4.7
 country length in words costs number of avg length avg cost
 Europe 0.0 280.00 28.0 0.0 10.00

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 650
 monthly average: cost = 85.00 number = 8.5
 country length in words costs number of avg length avg cost
 Europe 0.0 510.00 51.0 0.0 10.00

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 690
 monthly average: cost = 10.00 number = 1.0
 country length in words costs number of avg length avg cost
 Europe 0.0 60.00 6.0 0.0 10.00

 period : Sep 76 - Feb 77
 type of communication : eurtelex
 for cost center : 700
 monthly average: cost = 6.67 number = 0.7
 country length in words costs number of avg length avg cost
 Europe 0.0 40.00 4.0 0.0 10.00

period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 810

monthly average: cost = 363.33 number = 36.3

| country | length in words | costs in as | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|-------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 2180.00 | 218.0 | 0.0 | 10.00 |

period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 830

monthly average: cost = 3.33 number = 0.3

| country | length in words | costs in as | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|-------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 20.00 | 2.0 | 0.0 | 10.00 |

period : Sep 76 - Feb 77
type of communication : eurtelex
for cost center : 850

monthly average: cost = 8.33 number = 0.8

| country | length in words | costs in as | number of eurtelex | avg length eurtelex | avg cost eurtelex |
|---------|-----------------|-------------|--------------------|---------------------|-------------------|
| Europe | 0.0 | 50.00 | 5.0 | 0.0 | 10.00 |

APPENDIX E

NON-EUROPEAN TELEX

SAMPLE DATA :

By Country for the Whole Period and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period
Private

```

*****
period : Sep 76 - Feb 77
type of communication : telex
for cost center : 0

monthly average: cost = 9270.73 number = 73.0

country length in minutes costs in as number of telex avg length telex avg cost telex
Argentina 6.0 468.00 4.0 1.5 117.00
Brazil 2.0 156.00 1.0 2.0 156.00
Canada 108.0 6746.00 56.0 1.9 120.36
Iran 33.0 2569.00 13.0 2.5 197.52
Iraq 4.0 312.00 2.0 2.0 156.00
Israel 5.0 238.00 3.0 1.7 79.33
Japan 76.0 5850.00 33.0 2.3 177.27
Kenya 40.0 3120.00 22.0 1.8 141.82
Libya 19.0 98.80 7.0 2.7 14.11
Mexico 3.0 234.00 2.0 1.5 117.00
SouthAfr 3.0 156.00 2.0 1.5 78.00
Turkey 3.0 42.60 1.0 3.0 42.60
USA 572.0 35640.00 292.0 2.0 122.05
*****

overall 874.0 55624.40 438.0 2.0 127.00
data
*****

```

- 66 -

```

*****
period : Jan 77
type of communication : telex
for cost center : C

country    length in    costs    number of    avg length    avg cost
           minutes    in as    telex       telex        telex
Argentina  3.0             234.00      2.0         1.5         117.00
Canada    22.0            1320.00     12.0        1.8         110.00
Iran      4.0             312.00      2.0         2.0         156.00
Iraq      1.0             78.00       1.0         1.0         78.00
Japan     26.0            1950.00     10.0        2.6         195.00
Kenya     8.0             624.00      5.0         1.6         124.80
Libya     3.0             15.60       1.0         3.0         15.60
USA       86.0            5160.00     42.0        2.0         122.86
*****
overall
data      153.0      9693.60      75.0        2.0      129.25
*****

```

```

*****
period : Feb 77
type of communication : telex
for cost center : C

country    length in    costs    number of    avg length    avg cost
           minutes    in as    telex       telex        telex
Argentina  3.0             234.00      2.0         1.5         117.00
Brazil     2.0             156.00      1.0         2.0         156.00
Canada     12.0            720.00      6.0         2.0         120.00
Iran       4.0             312.00      2.0         2.0         156.00
Japan      11.0            858.00      6.0         1.8         143.00
Kenya      8.0             624.00      4.0         2.0         156.00
Libya      1.0             5.20        1.0         1.0         5.20
Mexico     3.0             234.00      2.0         1.5         117.00
SouthAfr  1.0             78.00       1.0         1.0         78.00
USA       55.0            4400.00     32.0        1.7         137.50
*****
overall
data      100.0      7621.20      57.0        1.8      133.71
*****

```

| | | | | | | | | | |
|---|-------------------|-------------|------------------|------------------|----------------|--|--|--|--|
| ***** | | | | | | | | | |
| period : Sep 76 - Feb 77 | | | | | | | | | |
| type of communication : telex | | | | | | | | | |
| for cost center : 100 | | | | | | | | | |
| monthly average: cost = 1367.00 number = 12.5 | | | | | | | | | |
| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex | | | | |
| Canada | 10.0 | 600.00 | 6.0 | 1.7 | 100.00 | | | | |
| Japan | 19.0 | 1482.00 | 10.0 | 1.9 | 148.20 | | | | |
| USA | 101.0 | 6120.00 | 59.0 | 1.7 | 103.73 | | | | |
| ***** | | | | | | | | | |
| overall data | 130.0 | 8202.00 | 75.0 | 1.7 | 109.36 | | | | |
| ***** | | | | | | | | | |
| period : Sep 76 - Feb 77 | | | | | | | | | |
| type of communication : telex | | | | | | | | | |
| for cost center : 110 | | | | | | | | | |
| monthly average: cost = 926.67 number = 5.5 | | | | | | | | | |
| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex | | | | |
| Canada | 20.0 | 1200.00 | 9.0 | 2.2 | 133.33 | | | | |
| Japan | 24.0 | 1972.00 | 7.0 | 3.4 | 267.43 | | | | |
| Kenya | 6.0 | 468.00 | 3.0 | 2.0 | 156.00 | | | | |
| USA | 32.0 | 2020.00 | 14.0 | 2.3 | 144.29 | | | | |
| ***** | | | | | | | | | |
| overall data | 32.0 | 5550.00 | 33.0 | 2.5 | 169.49 | | | | |
| ***** | | | | | | | | | |

| | | | | | | | | | |
|---|-------------------|-------------|------------------|------------------|----------------|--|--|--|--|
| ***** | | | | | | | | | |
| period : Sep 76 - Feb 77 | | | | | | | | | |
| type of communication : telex | | | | | | | | | |
| for cost center : 130 | | | | | | | | | |
| monthly average: cost = 468.00 number = 3.5 | | | | | | | | | |
| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex | | | | |
| Canada | 25.0 | 1760.00 | 11.0 | 2.3 | 160.00 | | | | |
| Israel | 5.0 | 238.00 | 3.0 | 1.7 | 79.33 | | | | |
| Japan | 2.0 | 156.00 | 1.0 | 2.0 | 156.00 | | | | |
| Mexico | 3.0 | 234.00 | 2.0 | 1.5 | 117.00 | | | | |
| USA | 7.0 | 420.00 | 4.0 | 1.8 | 105.00 | | | | |
| ***** | | | | | | | | | |
| overall data | 42.0 | 2808.00 | 21.0 | 2.0 | 133.71 | | | | |
| ***** | | | | | | | | | |
| period : Sep 76 - Feb 77 | | | | | | | | | |
| type of communication : telex | | | | | | | | | |
| for cost center : 160 | | | | | | | | | |
| monthly average: cost = 320.00 number = 2.8 | | | | | | | | | |
| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex | | | | |
| Canada | 2.0 | 120.00 | 1.0 | 2.0 | 120.00 | | | | |
| USA | 30.0 | 1800.00 | 16.0 | 1.9 | 112.50 | | | | |
| ***** | | | | | | | | | |
| overall data | 32.0 | 1920.00 | 17.0 | 1.9 | 112.94 | | | | |
| ***** | | | | | | | | | |

period : Sep 76 - Feb 77
type of communication : telex
for cost center : 510

monthly average: cost = 1046.00 number = 9.2

| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex |
|---------|-------------------|-------------|------------------|------------------|----------------|
| Canada | 6.0 | 360.00 | 4.0 | 1.5 | 90.00 |
| Japan | 2.0 | 156.00 | 1.0 | 2.0 | 156.00 |
| USA | 96.0 | 5760.00 | 50.0 | 1.9 | 115.20 |

overall data 104.0 6276.00 55.0 1.9 114.11

period : Sep 76 - Feb 77
type of communication : telex
for cost center : 520

monthly average: cost = 40.00 number = 0.3

| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex |
|---------|-------------------|-------------|------------------|------------------|----------------|
| USA | 4.0 | 240.00 | 2.0 | 2.0 | 120.00 |

overall data 4.0 240.00 2.0 2.0 120.00

period : Sep 76 - Feb 77
type of communication : telex
for cost center : 560

monthly average: cost = 126.00 number = 1.0

| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex |
|---------|-------------------|-------------|------------------|------------------|----------------|
| Iran | 2.0 | 156.00 | 1.0 | 2.0 | 156.00 |
| USA | 10.0 | 600.00 | 5.0 | 2.0 | 120.00 |

overall data 12.0 756.00 6.0 2.0 126.00

period : Sep 76 - Feb 77
type of communication : telex
for cost center : 170

monthly average: cost = 10.00 number = 0.2

| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex |
|---------|-------------------|-------------|------------------|------------------|----------------|
| USA | 1.0 | 60.00 | 1.0 | 1.0 | 60.00 |

overall data 1.0 60.00 1.0 1.0 60.00

period : Sep 76 - Feb 77
type of communication : telex
for cost center : 180

monthly average: cost = 60.00 number = 0.3

| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex |
|---------|-------------------|-------------|------------------|------------------|----------------|
| Canada | 6.0 | 360.00 | 2.0 | 3.0 | 180.00 |

overall data 6.0 360.00 2.0 3.0 180.00

period : Sep 76 - Feb 77
type of communication : telex
for cost center : 220

monthly average: cost = 20.00 number = 0.2

| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex |
|---------|-------------------|-------------|------------------|------------------|----------------|
| USA | 2.0 | 120.00 | 1.0 | 2.0 | 120.00 |

overall data 2.0 120.00 1.0 2.0 120.00

[illegible]

| | | | | | | | | | |
|---|-------------------|-------------|------------------|------------------|----------------|--|--|--|--|
| ***** | | | | | | | | | |
| type of communication : telex | | | | | | | | | |
| for cost center : 650 | | | | | | | | | |
| monthly average: cost = 752.00 number = 6.5 | | | | | | | | | |
| country | length in minutes | costs in as | number of telexs | avg length telex | avg cost telex | | | | |
| Argentina | 5.0 | 468.00 | 4.0 | 1.5 | 117.00 | | | | |
| Canada | 14.0 | 840.00 | 9.0 | 1.6 | 93.33 | | | | |
| Iran | 3.0 | 234.00 | 2.0 | 1.5 | 117.00 | | | | |
| Japan | 5.0 | 390.00 | 4.0 | 1.2 | 97.50 | | | | |
| Kenya | 10.0 | 780.00 | 6.0 | 1.7 | 130.00 | | | | |
| USA | 3.0 | 1800.00 | 14.0 | 2.1 | 128.57 | | | | |
| ***** | | | | | | | | | |
| overall data | 68.0 | 4512.00 | 39.0 | 1.7 | 115.69 | | | | |
| ***** | | | | | | | | | |


```

*****
period : Sep 76 - Feb 77
type of communication : telex
for cost center : 730

monthly average: cost = 316.33 number = 1.3

country length in minutes costs in as number of telex avg length telex avg cost telex
Japan 1.0 78.00 1.0 1.0 78.00
USA 12.0 1820.00 7.0 1.7 260.00
*****
overall data 13.0 1893.00 8.0 1.6 237.25
*****

*****
period : Sep 76 - Feb 77
type of communication : telex
for cost center : 770

monthly average: cost = 244.10 number = 2.0

country length in minutes costs in as number of telex avg length telex avg cost telex
Canada 6.0 360.00 4.0 1.5 90.00
Japan 6.0 468.00 3.0 2.0 156.00
Kenya 3.0 234.00 2.0 1.5 117.00
Turkey 3.0 42.60 1.0 3.0 42.60
USA 6.0 360.00 2.0 3.0 180.00
*****
overall data 24.0 1464.60 12.0 2.0 122.05
*****

*****
period : Sep 76 - Feb 77
type of communication : telex
for cost center : 810

monthly average: cost = 941.00 number = 6.5

country length in minutes costs in as number of telex avg length telex avg cost telex
Canada 6.0 360.00 3.0 2.0 120.00
Japan 8.0 546.00 2.0 4.0 273.00
USA 78.0 4740.00 34.0 2.3 139.41
*****
overall data 92.0 5646.00 39.0 2.4 144.77
*****

*****
period : Sep 76 - Feb 77
type of communication : telex
for cost center : 850

monthly average: cost = 70.00 number = 0.8

country length in minutes costs in as number of telex avg length telex avg cost telex
USA 7.0 420.00 5.0 1.4 84.00
*****
overall data 7.0 420.00 5.0 1.4 84.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : telex
for cost center : 1
monthly average: cost = 510.47 number = 7.5

country length in minutes costs in as number of telex avg length: telex avg cost
Canada 5.0 300.00 4.0 1.2 75.00
Iraq 4.0 312.00 2.0 2.0 156.00
Japan 2.0 156.00 1.0 2.0 156.00
Libya 19.0 98.80 7.0 2.7 14.11
SouthAfr 3.0 156.00 2.0 1.5 78.00
USA 34.0 2040.00 29.0 1.2 70.34
*****
overall 67.0 3062.80 45.0 1.5 68.06
data
*****

```

APPENDIX F

TRIPS

SAMPLE DATA :

For All Months and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period

| | | | | | |
|---------|--------|-----------|-------|-----|---------|
| overall | 1462.0 | 191532.00 | 106.0 | 7.7 | 1310.42 |
| data | | | | | |

```

*****
period : Sep 76
type of communication :      trip
for cost center :      0

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day
Austria      2.0          1310.00      1.0          2.0          655.00
USSR          4.0          3242.00      2.0          2.0          810.50
FRG           21.0         21042.00      5.0          4.2          1002.00
Hungary       7.0          4825.00      2.0          3.5          639.29
Poland        4.0          2272.00      1.0          4.0          568.00
UK            23.0         16890.00      2.0          11.5         473.48
USA           4.0          3775.00      1.0          4.0          943.75
USSR          6.0          5893.00      1.0          6.0          982.17
*****
overall
data      71.0      53249.00      15.0      4.7      749.99
*****

```

```

*****
period : Oct 76
type of communication :      trip
for cost center :      0

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day
Austria      11.0         10584.00      4.0          2.8          962.18
Bulgaria     17.0         9575.00      2.0          8.5          563.24
CSSR         1.0          412.00      1.0          1.0          412.00
Finland      21.0         71951.00      5.0          4.2          3426.24
France       36.0         38803.00      3.0          12.0         1077.86
FRG          25.0         44349.00      8.0          3.1          1773.92
Iran         13.0         43307.00      2.0          6.5          3331.31
Italy        8.0          8135.00      2.0          4.0          1016.89
Netherla     9.0          18411.00      2.0          4.5          2045.67
Nigeria     10.0         24660.00      1.0          10.0         2466.00
Sweden       6.0          12545.00      1.0          6.0          2090.83
Switzerl     22.0         21375.00      3.0          7.3          971.59
Turkey       8.0          10110.00      1.0          8.0          1263.75
UK           7.0          9407.00      2.0          3.5          1343.86
USA          43.0         81424.00      4.0          10.8         1993.58
USSR         35.0         52724.00      4.0          8.7          1506.40
Yugoslav     5.0          4377.00      1.0          5.0          875.40
*****
overall
data      277.0      462148.00      46.0      6.0      1669.40
*****

```

```

*****
period : Dec 76
type of communication :      trip
for cost center :      0

country      length in      costs      number of      avg length      avg cost
              days        in as        trips        trip          day
Austria      7.0          8000.00      2.0          3.5          1142.86
Belgium      1.0          6362.00      1.0          1.0          6362.00
Bulgaria     20.0         32246.00     3.0          6.7          1612.30
CSSR         6.0          3578.00      2.0          3.0          596.33
France       36.0         96519.00     9.0          4.0          2681.09
FRG          9.0          13536.00     3.0          3.0          1504.00
Hungary      8.0          7368.00      2.0          4.0          921.00
Italy        2.0          10156.00     2.0          1.0          5078.00
Japan        14.0         46488.00     1.0          14.0         3320.57
Netherla     15.0         10101.00     1.0          15.0          673.40
Norway       47.0         32000.00     3.0          15.7          686.85
Sweden       5.0          16100.00     1.0          6.0          2683.33
UK           45.0         44603.00     4.0          11.3          991.18
USA          199.0        54387.00     4.0          49.5          274.68
USSR         29.0         24123.00     3.0          9.7          831.83
Yugoslav     4.0          5878.00      1.0          4.0          1460.50
*****
overall      447.0        411445.00     42.0         10.6          920.46
data
*****

```

```

*****
period : Nov 76
type of communication :      trip
for cost center :      0

country      length in      costs      number of      avg length      avg cost
              days        in as        trips        trip          day
Austria      1.0          184.00       1.0          1.0          184.00
Belgium      4.0          9952.00      1.0          4.0          2488.00
France       11.0         13644.00     2.0          5.5          1240.36
FRG          8.0          10655.00     1.0          8.0          1331.89
Hungary      3.0          2837.00      1.0          3.0          945.67
Kenya        14.0         28766.00     1.0          14.0          2054.71
Mexico       20.0         42142.00     2.0          10.0          2107.10
Switzerl     9.0          23320.00     3.0          3.0          2591.11
UK           37.0         42851.00     5.0          7.4          1159.14
USA          93.0         169293.00    9.0          12.3          1727.49
USSR         13.0         34859.00     3.0          4.3          2681.46
Yugoslav     9.0          15377.00     3.0          3.0          1708.56
*****
overall      227.0        393880.00     31.0          7.3          1735.15
data
*****

```

```

*****
period : Jan 77
type of communication :      trip
for cost center :      0

country . length in days      costs      number of      avg length      avg cost
              days      in as      trips      trip      day

Bulgaria      7.0      16348.00      2.0      3.5      2335.43
Canada      75.0      54697.00      3.0      25.0      729.29
CSSR      7.0      7935.00      2.0      3.5      1133.57
France      14.0      19077.00      3.0      4.7      1362.64
FRG      13.0      34725.00      6.0      2.2      2671.15
Italy      4.0      2441.00      1.0      4.0      610.25
Kenya      47.0      20019.00      1.0      47.0      425.31
Rumania      11.0      19663.00      1.0      11.0      1797.55
Switzerl      5.0      8773.00      1.0      5.0      1755.00
UK      27.0      19052.00      3.0      9.0      705.63
USSR      51.0      52176.00      5.0      10.2      1023.06

*****
overall
data      261.0      254907.00      28.0      9.3      976.56
*****

*****
period : Feb 77
type of communication :      trip
for cost center :      0

country      length in days      costs      number of      avg length      avg cost
              days      in as      trips      trip      day

Austria      6.0      2238.00      1.0      6.0      373.00
Belgium      8.0      14685.00      1.0      8.0      1835.63
Bulgaria      16.0      30660.00      4.0      4.0      1916.25
Finland      18.0      29161.00      1.0      18.0      1620.06
France      20.0      31944.00      3.0      6.7      1597.20
FRG      24.0      60336.00      9.0      2.7      2514.00
Italy      4.0      6120.00      1.0      4.0      1530.00
Japan      20.0      102602.00      2.0      10.0      5130.10
Sweden      8.0      7700.00      1.0      8.0      962.50
Switzerl      12.0      23293.00      3.0      4.0      1041.08
USA      22.0      13700.00      1.0      22.0      622.73
USSR      21.0      17764.00      1.0      21.0      845.90

*****
overall
data      179.0      340203.00      28.0      6.4      1900.59
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 150

monthly average: cost = 4289.50      number = 0.2

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day

Canada      33.0      25737.00      1.0      33.0      779.91
*****
overall
data      33.0      25737.00      1.0      33.0      779.91
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 160

monthly average: cost = 791.67      number = 0.2

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day

Austria      5.0      4750.00      1.0      5.0      950.00
*****
overall
data      5.0      4750.00      1.0      5.0      950.00
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 170

monthly average: cost = 111.33      number = 0.2

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day

UK      2.0      668.00      1.0      2.0      334.00
*****
overall
data      2.0      668.00      1.0      2.0      334.00
*****
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 100

monthly average: cost = 28919.17      number = 2.3

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day

Bulgaria      10.0      18475.00      2.0      5.0      1847.50
Canada      10.0      2460.00      1.0      10.0      2460.00
CSSR      2.0      3735.00      1.0      2.0      1967.50
Finland      19.0      59255.00      4.0      4.8      3118.69
France      6.0      15274.00      1.0      6.0      2545.67
Hungary      2.0      1374.00      1.0      2.0      687.00
Japan      10.0      54530.00      1.0      10.0      5453.00
Switzerland      1.0      3700.00      1.0      1.0      3700.00
USA      15.0      10200.00      1.0      15.0      680.00
USSR      8.0      4512.00      1.0      8.0      564.00
*****
overall
data      83.0      173515.00      14.0      5.9      2090.54
*****
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 110

monthly average: cost = 11189.67      number = 0.7

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day

CSSR      4.0      3242.00      2.0      2.0      810.50
Japan      10.0      48072.00      1.0      10.0      4807.20
USSR      6.0      15824.00      1.0      5.0      2637.33
*****
overall
data      20.0      67128.00      4.0      5.0      3356.20
*****

```



```

*****
period : Sep 76 - Feb 77      trip
type of communication :      21c
for cost center : 21c

monthly average: cost = 389.67      number = 0.2

country      length in      costs      number of      avg length      avg cost
days      in as      trips      trip      day

Austria      1.0      2338.00      1.0      1.0      2338.00
*****

overall
data      1.0      2338.00      1.0      1.0      2338.00
*****

period : Sep 76 - Feb 77      trip
type of communication :      232
for cost center : 232

monthly average: cost = 1522.67      number = 0.2

country      length in      costs      number of      avg length      avg cost
days      in as      trips      trip      day

Bulgaria      4.0      9136.00      1.0      4.0      2284.00
*****

overall
data      4.0      9136.00      1.0      4.0      2284.00
*****

period : Sep 76 - Feb 77      trip
type of communication :      24c
for cost center : 24c

monthly average: cost = 2142.33      number = 0.3

country      length in      costs      number of      avg length      avg cost
days      in as      trips      trip      day

Austria      2.0      3343.00      1.0      2.0      1674.00
Bulgaria      4.0      9505.00      1.0      4.0      2376.50
*****

overall
data      6.0      12854.00      2.0      3.0      2142.33
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :      26c
for cost center : 26c

monthly average: cost = 2980.67      number = 0.3

country      length in      costs      number of      avg length      avg cost
days      in as      trips      trip      day

UK      13.0      17884.00      2.0      6.5      1375.69
*****

overall
data      13.0      17884.00      2.0      6.5      1375.69
*****

period : Sep 76 - Feb 77      trip
type of communication :      29c
for cost center : 29c

monthly average: cost = 4092.33      number = 0.5

country      length in      costs      number of      avg length      avg cost
days      in as      trips      trip      day

Austria      2.0      3250.00      1.0      2.0      1625.00
Bulgaria      12.0      13604.00      1.0      12.0      1133.67
Sweden      8.0      7700.00      1.0      8.0      962.50
*****

overall
data      22.0      24554.00      3.0      7.3      1116.09
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 510

monthly average: cost = 69092.84      number = 7.2

country    length in    costs    number of    avg length    avg cost
           days        in as    trips      trip         day
Austria    1.0        184.00    1.0        1.0        184.00
Belgium    5.0        16314.00  2.0        2.5        3262.90
Bulgaria   3.0        7448.00  1.0        3.0        2482.67
CSSR       1.0        412.00   1.0        1.0        412.00
France     72.0       92078.00  9.0        8.0        1278.96
FRG        39.0       80678.00  13.0       3.0        2068.67
Italy      5.0        7121.00  2.0        2.5        1424.20
Netherla   15.0       10101.00  1.0        15.0       673.40
Switzerl   24.0       26127.00  3.0        8.0        1088.63
UK         13.0       15683.00  2.0        6.5        1206.38
USA        158.0      118026.00 5.0        31.5       747.00
USSR       24.0       40395.00  3.0        8.0        1682.71
*****
overall    360.0    414557.00    43.0      8.4    1151.55
data
*****
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 520

monthly average: cost = 2238.17      number = 0.3

country    length in    costs    number of    avg length    avg cost
           days        in as    trips      trip         day
France     2.0        4654.00  1.0        2.0        2327.00
Switzerl   5.0        9775.00  1.0        5.0        1755.00
*****
overall    7.0      13429.00    2.0      2.5    1019.43
data
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 540

monthly average: cost = 2487.33      number = 0.3

country    length in    costs    number of    avg length    avg cost
           days        in as    trips      trip         day
Switzerl   6.0       14924.00  2.0        3.0        2487.33
*****
overall    6.0     14924.00    2.0      3.0    2487.33
data
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 550

monthly average: cost = 13919.83      number = 1.3

country    length in    costs    number of    avg length    avg cost
           days        in as    trips      trip         day
FRG        10.0       31176.00  5.0        2.0        3117.60
UK         16.0       21618.00  2.0        8.0        1351.13
USA        25.0       30725.00  1.0        25.0        1229.00
*****
overall    51.0     83519.00    8.0      6.4    1637.63
data
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 560

monthly average: cost = 3592.17      number = 0.8

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day
Belgium      8.0      14685.00      1.0      8.0      1835.63
FRG          10.0     6868.00      4.0      2.5      686.80
*****
overall
data      18.0     21553.00      5.0      3.6      1197.30
*****
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 610

monthly average: cost = 59819.50      number = 4.8

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day
Bulgaria     16.0     14268.00      3.0      5.3      891.75
Finland      2.0     12695.00      1.0      2.0      6348.00
France       9.0     21163.00      2.0      4.5      2351.44
FRG          8.0     14398.00      3.0      2.7      1799.75
Hungary      3.0      4517.00      1.0      3.0      1505.57
Iran         13.0     43307.00      2.0      6.5      3331.31
Italy        5.0     11596.00      2.0      2.5      2319.20
Japan        14.0     46488.00      1.0      14.0      3320.57
Mexico       20.0     42142.00      2.0      10.0      2107.10
Ncrway       47.0     32000.00      3.0      15.7      590.35
UK           30.0     20000.00      2.0      15.0      666.67
USA          31.0     71264.00      4.0      7.8      2298.94
USSR         6.0     19200.00      2.0      3.0      3200.00
Yugoslav     4.0      5373.00      1.0      4.0      1460.50
*****
overall
data      208.0     252417.00      29.0      7.2      1725.56
*****

```

```

*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 650

monthly average: cost = 10052.50      number = 0.8

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day
Austria      5.0      2899.00      1.0      5.0      579.80
Nigeria     10.0     24660.00      1.0      10.0      2466.00
Switzerl     6.0     13892.00      2.0      3.0      2315.33
USSR        24.0     18864.00      1.0      24.0      786.00
*****
overall
data      45.0     60315.00      5.0      9.0      1340.33
*****
*****
period : Sep 76 - Feb 77      trip
type of communication :
for cost center : 670

monthly average: cost = 12600.67      number = 0.8

country      length in      costs      number of      avg length      avg cost
              days          in as      trips          trip          day
Kenya        61.0     48784.00      2.0      30.5      799.74
Switzerl     6.0      9345.00      1.0      6.0      1557.50
USA          26.0     17475.00      2.0      13.0      672.12
*****
overall
data      93.0     75604.00      5.0      19.6      812.95
*****

```

period : Sep 76 - Feb 77 trip
 type of communication :
 for cost center : 810

monthly average: cost = 53775.83 number = 5.0

| country | length in days | costs in as | number of trips | avg length trip | avg cost day |
|----------|-------------------|----------------|--------------------|--------------------|-----------------|
| Bulgaria | 3.0 | 7900.00 | 1.0 | 3.0 | 2633.33 |
| Canada | 32.0 | 26500.00 | 1.0 | 32.0 | 828.12 |
| CSSR | 6.0 | 3578.00 | 2.0 | 3.0 | 596.33 |
| France | 25.0 | 57334.00 | 6.0 | 4.2 | 2293.36 |
| FRG | 7.0 | 9024.00 | 1.0 | 7.0 | 1289.14 |
| Hungary | 5.0 | 3451.00 | 1.0 | 5.0 | 690.20 |
| Italy | 8.0 | 8135.00 | 2.0 | 4.0 | 1016.98 |
| Netherla | 3.0 | 7221.00 | 1.0 | 3.0 | 2407.00 |
| Rumania | 11.0 | 19663.00 | 1.0 | 11.0 | 1797.55 |
| Sweden | 12.0 | 28645.00 | 2.0 | 6.0 | 2387.09 |
| UK | 18.0 | 26216.00 | 2.0 | 9.0 | 1456.44 |
| USA | 94.0 | 58097.00 | 4.0 | 23.5 | 619.05 |
| USSR | 50.0 | 54664.00 | 4.0 | 12.5 | 1093.28 |
| Yugoslav | 8.0 | 12227.00 | 2.0 | 4.0 | 1528.33 |

overall
 data 282.0 322655.00 30.0 9.4 1144.17

period : Sep 76 - Feb 77 trip
 type of communication :
 for cost center : 850

monthly average: cost = 2078.67 number = 0.7

| country | length in days | costs in as | number of trips | avg length trip | avg cost day |
|---------|-------------------|----------------|--------------------|--------------------|-----------------|
| FRG | 4.0 | 3348.00 | 1.0 | 4.0 | 837.00 |
| Poland | 4.0 | 2272.00 | 1.0 | 4.0 | 568.00 |
| UK | 14.0 | 1168.00 | 1.0 | 14.0 | 83.43 |
| USSR | 18.0 | 5684.00 | 1.0 | 18.0 | 315.78 |

overall
 data 40.0 12472.00 4.0 10.0 311.90

period : Sep 76 - Feb 77 trip
 type of communication :
 for cost center : 730

monthly average: cost = 19570.83 number = 2.3

| country | length in days | costs in as | number of trips | avg length trip | avg cost day |
|----------|-------------------|----------------|--------------------|--------------------|-----------------|
| Bulgaria | 8.0 | 8492.00 | 1.0 | 8.0 | 1061.50 |
| CSSR | 5.0 | 4200.00 | 1.0 | 5.0 | 840.00 |
| Finland | 18.0 | 29161.00 | 1.0 | 18.0 | 1620.06 |
| France | 3.0 | 9484.00 | 1.0 | 3.0 | 3161.33 |
| FRG | 14.0 | 28495.00 | 4.0 | 3.5 | 2035.36 |
| Hungary | 3.0 | 2837.00 | 1.0 | 3.0 | 945.67 |
| Netherla | 6.0 | 11190.00 | 1.0 | 6.0 | 1865.00 |
| UK | 33.0 | 23566.00 | 4.0 | 8.3 | 714.12 |

overall
 data 90.0 117425.00 14.0 6.4 1304.72

period : Sep 76 - Feb 77 trip
 type of communication :
 for cost center : 770

monthly average: cost = 13648.00 number = 2.2

| country | length in days | costs in as | number of trips | avg length trip | avg cost day |
|----------|-------------------|----------------|--------------------|--------------------|-----------------|
| Austria | 11.0 | 5547.00 | 3.0 | 3.7 | 504.27 |
| FRG | 8.0 | 10655.00 | 1.0 | 8.0 | 1331.88 |
| Hungary | 5.0 | 2851.00 | 1.0 | 5.0 | 570.20 |
| Turkey | 8.0 | 10110.00 | 1.0 | 8.0 | 1263.75 |
| USA | 16.0 | 16792.00 | 1.0 | 16.0 | 1049.50 |
| USSR | 19.0 | 28406.00 | 4.0 | 4.8 | 1495.05 |
| Yugoslav | 6.0 | 7527.00 | 2.0 | 3.0 | 1254.50 |

overall
 data 73.0 91333.00 13.0 5.6 1121.74

APPENDIX G

VISITORS

SAMPLE DATA :

For All Months and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period

```

*****
period : Sep 76 - Feb 77
type of communication : visit
for cost center : 0

monthly average: cost = 0.00 number = 18.2

country length in days costs number of visits avg length avg cost
in as visit day
Australia 2.0 0.00 1.0 2.0 0.00
Canada 41.0 0.00 7.0 5.9 0.00
CSSR 19.0 0.00 2.0 9.5 0.00
Egypt 31.0 0.00 1.0 31.0 0.00
France 4.0 0.00 1.0 4.0 0.00
FRG 14.0 0.00 5.0 2.8 0.00
GDR 33.0 0.00 1.0 33.0 0.00
Hungary 10.0 0.00 2.0 5.0 0.00
Italy 34.0 0.00 3.0 11.3 0.00
Japan 4.0 0.00 3.0 1.3 0.00
Mexico 2.0 0.00 1.0 1.0 0.00
Netherla 3.0 0.00 1.0 3.0 0.00
Poland 136.0 0.00 11.0 12.4 0.00
Sweden 8.0 0.00 1.0 8.0 0.00
Switzerl 13.0 0.00 1.0 13.0 0.00
UK 116.0 0.00 11.0 10.5 0.00
USA 247.0 0.00 37.0 6.7 0.00
USSR 425.0 0.00 19.0 22.4 0.00
*****
overall 1142.0 0.00 109.0 10.5 0.00
data
*****

```

```

*****
period : Nov 76
type of communication : visit
for cost center : 0

country      length in days  costs in as  number of visits  avg length visit  avg cost day
Canada      14.0                0.00          3.0             4.7              0.00
USSR        7.0                0.00          1.0             7.0              0.00
FRG         7.0                0.00          2.0             3.5              0.00
Italy       32.0               0.00          1.0             32.0             0.00
Japan       1.0                0.00          1.0             1.0              0.00
Poland      34.0               0.00          4.0             8.5              0.00
Switzerland 13.0               0.00          1.0             13.0             0.00
UK          25.0               0.00          4.0             6.2              0.00
USA         46.0               0.00          6.0             7.7              0.00
USSR        130.0              0.00          5.0             26.0             0.00
*****
overall
data      309.0                0.00          28.0             11.0              0.00
*****

period : Dec 76
type of communication : visit
for cost center : 0

country      length in days  costs in as  number of visits  avg length visit  avg cost day
Canada      1.0                0.00          1.0             1.0              0.00
France      4.0                0.00          1.0             4.0              0.00
Hungary     10.0               0.00          2.0             5.0              0.00
Japan       1.0                0.00          1.0             1.0              0.00
Netherla    3.0                0.00          1.0             3.0              0.00
Poland      8.0                0.00          1.0             8.0              0.00
UK          9.0                0.00          2.0             4.5              0.00
USA         40.0               0.00          5.0             8.0              0.00
*****
overall
data      76.0                0.00          14.0             5.4              0.00
*****

period : Sep 76
type of communication : visit
for cost center : 0

country      length in days  costs in as  number of visits  avg length visit  avg cost day
Egypt        31.0               0.00          1.0             31.0             0.00
FRG          6.0                0.00          2.0             3.0              0.00
Japan        2.0                0.00          1.0             2.0              0.00
Poland       28.0               0.00          1.0             28.0             0.00
UK           31.0               0.00          1.0             31.0             0.00
USA          93.0               0.00          13.0            7.2              0.00
USSR        179.0              0.00          8.0             22.4             0.00
*****
overall
data      370.0                0.00          27.0             13.7              0.00
*****

period : Oct 76
type of communication : visit
for cost center : 0

country      length in days  costs in as  number of visits  avg length visit  avg cost day
Australia    2.0                0.00          1.0             2.0              0.00
Canada       26.0               0.00          3.0             8.7              0.00
USSR        12.0               0.00          1.0             12.0             0.00
FRG          1.0                0.00          1.0             1.0              0.00
GDR          33.0               0.00          1.0             33.0             0.00
Italy        2.0                0.00          1.0             2.0              0.00
Poland       47.0               0.00          2.0             23.5             0.00
Sweden       9.0                0.00          1.0             9.0              0.00
UK           38.0               0.00          2.0             19.0             0.00
USA          26.0               0.00          5.0             5.2              0.00
USSR         90.0               0.00          3.0             30.0             0.00
*****
overall
data      285.0                0.00          22.0             13.0              0.00
*****

```

```

*****
period : Jan 77
type of communication : visit
for cost center : 0

country    length in   costs   number of   avg length   avg cost
           days        in as   visits      visit        day
Poland     9.0             0.00       1.0         9.0         0.00
USA        38.0            0.00       6.0         6.3         0.00
*****

overall
data      47.0             0.00       7.0         6.7         0.00
*****

*****
period : Feb 77
type of communication : visit
for cost center : 0

country    length in   costs   number of   avg length   avg cost
           days        in as   visits      visit        day
Mexico     2.0             0.00       2.0         1.0         0.00
Poland    10.0            0.00       2.0         5.0         0.00
UK        13.0            0.00       2.0         6.5         0.00
USA        4.0             0.00       2.0         2.0         0.00
USSR      26.0            0.00       3.0         8.7         0.00
*****

overall
data      55.0             0.00      11.0         5.0         0.00
*****

```


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```

*****
period : Sep 76 - Feb 77      visit
type of communication :      510
for cost center : 510

monthly average: cost = 0.00    number = 3.7

country    length in    costs    number of    avg length    avg cost
            days        in as    visits      visit        day
France      4.0         0.00      1.0        4.0         0.00
FRG         12.0        0.00      4.0        3.0         0.00
Mexico      2.0         0.00      2.0        1.0         0.00
Poland     10.0        0.00      2.0        5.0         0.00
Switzerl   13.0        0.00      1.0       13.0         0.00
UK          62.0        0.00      4.0       15.5         0.00
USA        23.0        0.00      5.0        4.6         0.00
USSR       95.0        0.00      3.0       31.7         0.00
*****
overall
data      221.0      0.00      22.0      10.0      0.00
*****

*****
period : Sep 76 - Feb 77      visit
type of communication :      610
for cost center : 610

monthly average: cost = 0.00    number = 0.7

country    length in    costs    number of    avg length    avg cost
            days        in as    visits      visit        day
Hungary    10.0         0.00      2.0        5.0         0.00
USA        47.0         0.00      2.0       23.5         0.00
*****
overall
data      57.0      0.00      4.0      14.3      0.00
*****

```

```

*****
period : Sep 76 - Feb 77      visit
type of communication :      2
for cost center : 2

monthly average: cost = 0.00    number = 1.8

country    length in    costs    number of    avg length    avg cost
            days        in as    visits      visit        day
Canada     1.0         0.00      1.0        1.0         0.00
Japan      3.0         0.00      2.0        1.5         0.00
USA       10.0        0.00      8.0        1.2         0.00
*****
overall
data      14.0      0.00     11.0      1.3      0.00
*****

*****
period : Sep 76 - Feb 77      visit
type of communication :      100
for cost center : 100

monthly average: cost = 0.00    number = 2.8

country    length in    costs    number of    avg length    avg cost
            days        in as    visits      visit        day
FRG        2.0         0.00      1.0        2.0         0.00
USA       59.0         0.00      9.0        6.6         0.00
USSR     112.0         0.00      7.0       16.0         0.00
*****
overall
data     173.0      0.00     17.0     10.2      0.00
*****

```

 period : Sep 76 - Feb 77
 type of communication : visit
 for cost center : 77C
 monthly average: cost = 0.00 number = 3.7
 country length in days costs in as number of visits avg length visit avg cost day
 CSSR 7.0 0.00 1.0 7.0 0.00
 GDR 33.0 0.00 1.0 33.0 0.00
 Netherla 3.0 0.00 1.0 3.0 0.00
 Poland 88.0 0.00 6.0 14.7 0.00
 UK 14.0 0.00 4.0 3.5 0.00
 USA 31.0 0.00 3.0 10.3 0.00
 USSR 163.0 0.00 6.0 27.2 0.00

 overall
 data 339.0 0.00 22.0 15.4 0.00

 period : Sep 76 - Feb 77
 type of communication : visit
 for cost center : 81C
 monthly average: cost = 0.00 number = 1.8
 country length in days costs in as number of visits avg length visit avg cost day
 Canada 3.0 0.00 1.0 3.0 0.00
 Italy 2.0 0.00 2.0 1.0 0.00
 Japan 1.0 0.00 1.0 1.0 0.00
 Poland 10.0 0.00 2.0 5.0 0.00
 Sweden 8.0 0.00 1.0 8.0 0.00
 UK 5.0 0.00 1.0 5.0 0.00
 USA 40.0 0.00 3.0 13.3 0.00

 overall
 data 69.0 0.00 11.0 6.3 0.00

 period : Sep 76 - Feb 77
 type of communication : visit
 for cost center : 65C
 monthly average: cost = 0.00 number = 2.3
 country length in days costs in as number of visits avg length visit avg cost day
 Canada 37.0 0.00 5.0 7.4 0.00
 CSSR 12.0 0.00 1.0 12.0 0.00
 Egypt 31.0 0.00 1.0 31.0 0.00
 Italy 32.0 0.00 1.0 32.0 0.00
 Poland 28.0 0.00 1.0 28.0 0.00
 UK 31.0 0.00 1.0 31.0 0.00
 USA 23.0 0.00 3.0 7.7 0.00
 USSR 15.0 0.00 1.0 15.0 0.00

 overall
 data 209.0 0.00 14.0 14.9 0.00

 period : Sep 76 - Feb 77
 type of communication : visit
 for cost center : 73C
 monthly average: cost = 0.00 number = 1.3
 country length in days costs in as number of visits avg length visit avg cost day
 Australi 2.0 0.00 1.0 2.0 0.00
 UK 4.0 0.00 1.0 4.0 0.00
 USA 14.0 0.00 4.0 3.5 0.00
 USSR 40.0 0.00 2.0 20.0 0.00

 overall
 data 60.0 0.00 8.0 7.5 0.00

APPENDIX H

WORKSHOPS

SAMPLE DATA :

For All Months and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period

```
*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 0

country    length in    nr.of    number of    avg length    avg nr.
           days        persons workshops workshop persons
. Austria    37.0      410.00    12.0        3.1        34.17
*****
```

```

*****
period : Sep 76
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    6.0         92.00      3.0         2.0         30.67
*****

period : Oct 76
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    8.0         79.00      2.0         4.0         39.50
*****

period : Nov 76
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    2.0         40.00      1.0         2.0         40.00
*****

*****
period : Dec 76
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    7.0         52.00      2.0         3.5         26.00
*****

*****
period : Jan 77
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    14.0        147.00     4.0         3.5         36.75
*****

*****
period : Feb 77
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    14.0        147.00     4.0         3.5         36.75
*****

*****
period : Feb 77
type of communication : workshop
for cost center : 0

country    length in   nr.of   number of   avg length   avg nr.
           days        persons workshops workshop persons
Austria    14.0        147.00     4.0         3.5         36.75
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 730

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      4.0        40.00      1.0        4.0        40.00
*****

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 770

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      1.0        50.00      1.0        1.0        50.00
*****

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 810

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      7.0        97.00      2.0        3.5        48.50
*****

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 850

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      5.0        82.00      2.0        2.5        41.00
*****

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 510

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      3.0        12.00      1.0        3.0        12.00
*****

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 610

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      1.0        10.00      1.0        1.0        10.00
*****

*****
period : Sep 76 - Feb 77
type of communication : workshop
for cost center : 650

country      length in  nr.of  number of  avg length  avg nr.
              days      persons workshops workshop persons
Austria      16.0       119.00      4.0        4.0        29.75
*****

```

APPENDIX I

MAIL

SAMPLE DATA :

For All Months and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period

```
*****
period : Sep 76 - Feb 77
type of communication : mail
for cost center : 0
monthly average: cost = 99309.34 number = 6620.7

country length in items costs number of items avg length avg cost
all 0.0 595856.06 39724.2 0.0 15.00
*****
```


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```
*****
period : Dec 76
type of communication : mail
for cost center : 0

country length in items costs in as items number of items avg length item avg cost item
all 0.0 121914.60 8127.8 0.0 15.00
*****
```

```
*****
period : Jan 77
type of communication : mail
for cost center : 0

country length in items costs in as items number of items avg length item avg cost item
all 0.0 88574.41 5905.1 0.0 15.00
*****
```

```
*****
period : Feb 77
type of communication : mail
for cost center : 0

country length in items costs in as items number of items avg length item avg cost item
all 0.0 115589.20 7705.9 0.0 15.00
*****
```

```
*****
period : Sep 76
type of communication : mail
for cost center : 0

country length in items costs in as items number of items avg length item avg cost item
all 0.0 85994.70 5732.9 0.0 15.00
*****
```

```
*****
period : Oct 76
type of communication : mail
for cost center : 0

country length in items costs in as items number of items avg length item avg cost item
all 0.0 70058.80 4670.8 0.0 15.00
*****
```

```
*****
period : Nov 76
type of communication : mail
for cost center : 0

country length in items costs in as items number of items avg length item avg cost item
all 0.0 113724.30 7581.7 0.0 15.00
*****
```

```

*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 130

monthly average: cost = 718.07      number = 47.9

country      length in items      costs      number of items      avg length item      avg cost item
all          0.0      4308.40      287.2      0.0      15.00
*****

*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 140

monthly average: cost = 2028.50      number = 135.2

country      length in items      costs      number of items      avg length item      avg cost item
all          0.0      12171.00      811.3      0.0      15.00
*****

*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 150

monthly average: cost = 176.92      number = 11.8

country      length in items      costs      number of items      avg length item      avg cost item
all          0.0      1061.50      70.7      0.0      15.00
*****

*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 100

monthly average: cost = 15428.92      number = 1028.6

country      length in items      costs      number of items      avg length item      avg cost item
all          0.0      92573.50      6171.6      0.0      15.00
*****

*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 110

monthly average: cost = 886.13      number = 59.1

country      length in items      costs      number of items      avg length item      avg cost item
all          0.0      5316.80      354.4      0.0      15.00
*****

*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 120

monthly average: cost = 4062.55      number = 270.8

country      length in items      costs      number of items      avg length item      avg cost item
all          0.0      2375.30      1625.0      0.0      15.00
*****

```

period : Sep 76 - Feb 77
 type of communication : mail
 for cost center : 200
 monthly average: cost = 353.58 number = 23.6

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 2121.50 | 141.5 | 0.0 | 15.00 |

period : Sep 76 - Feb 77
 type of communication : mail
 for cost center : 210
 monthly average: cost = 606.95 number = 40.5

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 3641.70 | 242.9 | 0.0 | 15.00 |

period : Sep 76 - Feb 77
 type of communication : mail
 for cost center : 220
 monthly average: cost = 220.92 number = 14.8

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 1325.50 | 88.5 | 0.0 | 15.00 |

period : Sep 76 - Feb 77
 type of communication : mail
 for cost center : 160
 monthly average: cost = 2789.92 number = 196.0

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 16739.50 | 1115.9 | 0.0 | 15.00 |

period : Sep 76 - Feb 77
 type of communication : mail
 for cost center : 170
 monthly average: cost = 25716.42 number = 1714.4

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 154298.50 | 10286.6 | 0.0 | 15.00 |

period : Sep 76 - Feb 77
 type of communication : mail
 for cost center : 180
 monthly average: cost = 127.33 number = 9.5

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 764.00 | 50.0 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 240

monthly average: cost = 208.42 number = 13.9

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 1250.50 | 83.4 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 250

monthly average: cost = 4.00 number = 0.3

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 24.00 | 1.6 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 260

monthly average: cost = 270.80 number = 18.0

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 1624.80 | 108.2 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 230

monthly average: cost = 40.58 number = 2.7

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 243.50 | 16.3 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 231

monthly average: cost = 2.42 number = 0.2

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 14.50 | 1.0 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 232

monthly average: cost = 3.92 number = 0.3

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 23.50 | 1.6 | 0.0 | 15.00 |

```
*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 520

monthly average: cost =      2.50      number =      0.2

country      length in      costs      number of      avg length      avg cost
              items        in as      items        item
all          0.0          15.00        1.0          0.0          15.00
*****
```

```
*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 550

monthly average: cost =     555.50      number =     37.0

country      length in      costs      number of      avg length      avg cost
              items        in as      items        item
all          0.0          3333.00      222.1         0.0          15.00
*****
```

```
*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 560

monthly average: cost =     1637.93      number =    109.2

country      length in      costs      number of      avg length      avg cost
              items        in as      items        item
all          0.0          9827.60      655.1         0.0          15.00
*****
```

```
*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 270

monthly average: cost =     22.50      number =     1.5

country      length in      costs      number of      avg length      avg cost
              items        in as      items        item
all          0.0          135.00        9.0          0.0          15.00
*****
```

```
*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 290

monthly average: cost =     209.50      number =     14.0

country      length in      costs      number of      avg length      avg cost
              items        in as      items        item
all          0.0          1257.00      83.8          0.0          15.00
*****
```

```
*****
period : Sep 76 - Feb 77      mail
type of communication :
for cost center : 510

monthly average: cost =    11027.28      number =    735.2

country      length in      costs      number of      avg length      avg cost
              items        in as      items        item
all          0.0          66163.70     4410.9         0.0          15.00
*****
```

 period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 680
 monthly average: cost = 155.33 number = 10.4
 country length in items costs in as items avg length item avg cost item
 all 0.0 0.0 932.00 52.2 0.0 15.00

 period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 700
 monthly average: cost = 2.00 number = 0.1
 country length in items costs in as items avg length item avg cost item
 all 0.0 0.0 12.00 0.8 0.0 15.00

 period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 730
 monthly average: cost = 5802.73 number = 386.9
 country length in items costs in as items avg length item avg cost item
 all 0.0 0.0 34816.40 2321.1 0.0 15.00

 period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 610
 monthly average: cost = 5398.73 number = 360.0
 country length in items costs in as items avg length item avg cost item
 all 0.0 0.0 32392.40 2159.8 0.0 15.00

 period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 650
 monthly average: cost = 5579.37 number = 372.0
 country length in items costs in as items avg length item avg cost item
 all 0.0 0.0 33476.20 2231.9 0.0 15.00

 period : Sep 76 - Feb 77 mail
 type of communication :
 for cost center : 670
 monthly average: cost = 153.83 number = 10.3
 country length in items costs in as items avg length item avg cost item
 all 0.0 0.0 923.00 61.5 0.0 15.00

period : Sep 76 - Feb 77 mail
type of communication :
for cost center : 770

monthly average: cost = 2565.27 number = 171.0

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 15391.60 | 1026.1 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
type of communication :
for cost center : 780

monthly average: cost = 9.17 number = 0.6

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 55.00 | 3.7 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
type of communication :
for cost center : 810

monthly average: cost = 9606.77 number = 640.4

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 57640.60 | 3842.6 | 0.0 | 15.00 |

period : Sep 76 - Feb 77 mail
type of communication :
for cost center : 850

monthly average: cost = 2934.58 number = 195.7

| country | length in items | costs in as | number of items | avg length item | avg cost item |
|---------|--------------------|----------------|--------------------|--------------------|------------------|
| all | 0.0 | 17607.50 | 1174.1 | 0.0 | 15.00 |

APPENDIX J

REPORTS

SAMPLE DATA :

For All Months and All Cost Centers
By Month for All Cost Centers
By Cost Center for the Whole Period


```
*****
period : Sep 76 ~ Feb 77
type of communication : report
for cost center : C

monthly average: cost = 162845.83      number = 8.2

country  length in  costs  number of  avg length  avg cost
          pages    in as  reports  report     page
all      3553.0    977075.00    49.0    72.5     275.00
*****
```

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```

*****
period : Dec 76
type of communication : report
for cost center : 0

country    length in    costs    number of    avg length    avg cost
           pages      in as    reports    report      page
all        784.0      215600.00    11.0      71.3      275.00
*****

*****
period : Jan 77
type of communication : report
for cost center : 0

country    length in    costs    number of    avg length    avg cost
           pages      in as    reports    report      page
all        333.0      91575.00     7.0      47.6      275.00
*****

*****
period : Feb 77
type of communication : report
for cost center : 0

country    length in    costs    number of    avg length    avg cost
           pages      in as    reports    report      page
all        623.0      171325.00    11.0      56.6      275.00
*****

*****
period : Sep 76
type of communication : report
for cost center : 0

country    length in    costs    number of    avg length    avg cost
           pages      in as    reports    report      page
all        325.0      89375.00     8.0      40.6      275.00
*****

*****
period : Oct 76
type of communication : report
for cost center : 0

country    length in    costs    number of    avg length    avg cost
           pages      in as    reports    report      page
all        819.0      225225.00     5.0      163.8      275.00
*****

*****
period : Nov 76
type of communication : report
for cost center : 0

country    length in    costs    number of    avg length    avg cost
           pages      in as    reports    report      page
all        689.0      183975.00     7.0      95.6      275.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : report
for cost center : 650

monthly average: cost = 21358.33 number = 1.3

country length in pages costs in as reports avg length report avg cost page
all 466.0 128150.00 8.0 58.3 275.00
*****

period : Sep 76 - Feb 77
type of communication : report
for cost center : 730

monthly average: cost = 13200.00 number = 1.3

country length in pages costs in as reports avg length report avg cost page
all 288.0 79200.00 8.0 36.0 275.00
*****

period : Sep 76 - Feb 77
type of communication : report
for cost center : 770

monthly average: cost = 22366.67 number = 0.7

country length in pages costs in as reports avg length report avg cost page
all 488.0 134200.00 4.0 122.0 275.00
*****

```

```

*****
period : Sep 76 - Feb 77
type of communication : report
for cost center : 160

monthly average: cost = 687.50 number = 0.2

country length in pages costs in as reports avg length report avg cost page
all 15.0 4125.00 1.0 15.0 275.00
*****

period : Sep 76 - Feb 77
type of communication : report
for cost center : 510

monthly average: cost = 45420.83 number = 1.8

country length in pages costs in as reports avg length report avg cost page
all 991.0 272525.00 11.0 90.1 275.00
*****

period : Sep 76 - Feb 77
type of communication : report
for cost center : 610

monthly average: cost = 34100.00 number = 0.7

country length in pages costs in as reports avg length report avg cost page
all 744.0 204600.00 4.0 186.0 275.00
*****

```

```
*****
period : Sep 76 - Feb 77
type of communication : report
for cost center : 810

monthly average: cost = 20212.50      number = 1.7

country  length in  costs  number of  avg length  avg cost
pages   in as  reports  report      page
all      441.0  121275.00  10.0      44.1      275.00
*****
```

```
*****
period : Sep 76 - Feb 77
type of communication : report
for cost center : 850

monthly average: cost = 5500.00      number = 0.5

country  length in  costs  number of  avg length  avg cost
pages   in as  reports  report      page
all      120.0   33000.00  3.0      40.0      275.00
*****
```